FXE-120P

SERVICE MANUAL

AEP Model
UK Model
E Model

On repairing DV-19 board, refer to the schematic diagrams on this service manual.

Differences Manual

The electrical and mechanical specifications for the model FXE-120P are the same as those for the model FXE-100P except for the following functions (Added to the model FXE-120P). Details are on page 3.

Audio effect functions
LANC interface (two systems) function
Version-up by program modification

Therefore, this manual contains only the points which differ from the model FXE-100P.
For the informations not contained in this manual, please refer to the FXE-100P service manuals (9-973-583-☐☐).

4V13317

Notes for the page indication of destination in the block diagrams and the schematic diagrams and for finger marks.

(See page ☐☐): Pages on the original service manual.
<SEE PAGE ☐☐>: Pages on this service manual.
☞: Points added parts.
☛: Points deleted parts.
: Points changed parts.

MICROFILM

VIDEO EDITING SYSTEM

SONY®

SPECIFICATIONS

General

Signal system PAL
Power requirements
220 to 240 VAC, 50/60 Hz ±5%
Power consumtption
Maximum 65W
Operating temperature
5°C to 40°C (41°F to 104°F)
Storage temperature
–20°C to +60°C (–4°F to 140°F)
Mass Approximately 7.3 kg (16 lb 1 oz)
Dimensions (w/h/d)
424 × 138.5 × 437.5 mm (16 3/4 × 5 1/2 × 17 1/4 inches)

Editing controller functions

CPU 16 bit
Time counter Internal time counter (× 3)
Time count display range (hours:minutes:seconds:frames)
- Time code: 00:00:00:00 to 23:59:59:24
- CTL: ±9:59:59:24

Edit modes
- Insert (channels: video, audio 1, audio 2)
- Assemble
- First edit
- Time code insert
- Split (audio split offset from video IN point)
- Dynamic Motion Control (DMC)

Edit reference signals
- CTL signal
- SMPTE/EBU time code (LTC)
- 8 mm time code
- RC time code

Editing precision RS-422 interface:
±0 frame (time code)
±1 frame (CTL)
RS-232C interface:
±1 frame (time code)
LANC interface:
±5 frames (time code)
Transition time range
0 to 999 (unit: frames)
Pinch-on delay Simultaneous measurement of pinch-on delay for up to three VCRs connected to RS-422/RS-232C/LANC connectors. Measurement data stored in memory.
EDL memory capacity
99 edits

Control functions

VCR interfaces
RS-422 RS-422 (D-sub 9-pin) × 3
PLAYER 1, PLAYER 2, RECORDER
Connectable VCRs:
Hi8: EVO-9850P/9800P
S-VHS: SVO-9620, SVP-9020
Betacam: UVW-1800P (recorder)
U-matic: VO-9800P/9850P
RS-232C RS-232C (D-sub 9-pin) × 3
PLAYER 1, PLAYER 2, RECORDER
Connectable VCRs:
Hi8: EVO-9650P
LANC LANC (stereo mini-minijack) × 2
PLAYER 1, PLAYER2
Connectable VCRs: Refer to "Player VCRs Connectable Over the LANC Interface", given on a sheet supplied with this unit.
VCR remote control functions
Playback, still playback, fast forward, rewind, standby off, stop, jog control, shuttle control, record, eject, stop all VCRs, DMC
GPI interface GPI OUT (BNC) × 2
GPI IN (BNC)
EDL interface EDL IN/OUT (D-sub 9-pin)

Input connectors

Video input
S-video S VIDEO INPUT (mini DIN 4-pin) × 4, unbalanced PLAYER 1, PLAYER 2, AUX 1, RECORDER
- Y: 1.0 Vp-p, 75 Ω, sync negative
- C: 0.3 Vp-p, burst, 75 Ω
- Sync: 0.3 Vp-p

Composite video
VIDEO INPUT (BNC) × 4, unbalanced
PLAYER 1, PLAYER 2, AUX 1, RECORDER
- Video: 1.0 Vp-p, 75 Ω, sync negative
- Sync: 0.3 Vp-p
- Burst: 0.3 Vp-p

Audio input
Stereo AUDIO L/R INPUT (phono jack), 2 channels × 5
PLAYER 1 MAIN (2), SUB (2)
PLAYER 2 MAIN (2), SUB (2)
RECORDER (2)
AUX 1 (2)
AUX 2 (2)
Impedance selectable with 600 Ω termination switch.
Input level:
–7.5 dBs [1] (input impedance 47 kΩ or above, 600 Ω switch OFF)
Microphone MIC (monaural phone), unbalanced
- Input level: –60 dBs [1]
- Input impedance: 4.3 kΩ or above

Output connectors

Video ouput
S-video S VIDEO OUTPUT (mini DIN 4-pin) × 2, unbalanced
PGM 1, PGM 2
- Y: 1.0 Vp-p, 75 Ω, sync negative
- C: 0.3 Vp-p, burst, 75 Ω
- Sync: 0.3 Vp-p (FXE-120P)

Composite video
VIDEO OUTPUT (BNC) × 3, unbalanced
PGM 1, PGM 2, MONITOR
- Video: 1.0 Vp-p,75 Ω, sync negative
- Sync: 0.3 Vp-p
- Burst: 0.3 Vp-p

Black burst B.B OUT (BNC) × 4, unbalanced
- Sync: 0.3 Vp-p, 75 Ω
- Burst: 0.3 Vp-p, 75 Ω

Audio output (stereo)
AUDIO L/R OUTPUT (phono jack) × 6
PGM 1 (2), PGM 2 (2), MONITOR (2)
PGM 1, PGM 2 output level selectable with –7.5 dB/+4 dB switch

Video characteristics

Sampling rate Y: 910 fH [2]
R–Y, B–Y: 1/4 × 910 fH
Quantizing Y, R–Y, B–Y: 8-bit
Frequency 0 to 5 MHz, +1 dB/–4 dB
Signal-to-noise ratio
53 dB or above

Accessories supplied

AC power cord (1)
LANC cable (stereo mini-mini ⟷ stereo mini-mini) (2)
Operating Instructions (1)
Handbook (1)
List of LANC interface VCRs (1)

Design and specifications are subject to change without notice.

1) 0 dBs = 0.775 Vrms
2) 1 fH = 15.734 kHz (NTSC) or 15.625 kHz (PAL)

• MODIFIED POINTS

Board Name		Modified Points	Reference Manual
FXE-100P	FXE-120P		
AM-32	AM-37	Added the audio effect circuit	FXE-120P
AS-46	AS-46(P)	Not modified Changes supplying form for service. Mounted PCB to PCB only	FXE-100P/120P
CP-64	CP-75	Added the LANC interface circuit	FXE-120P
DP-46	DP-53	Added the audio effect control	FXE-120P
DV-19	DV-19	Disused capacitors deletion, Microcomputers version-up	FXE-100P/120P
ED-41	ED-41	Not modified	FXE-100P
FU-123	FU-123	Not modified	FXE-100P
JS-25	JS-25	Not modified	FXE-100P
KS-15	KS-15	Not modified	FXE-100P
KY-22	KY-22	Part number (Not modified in circuit)	FXE-100P/120P
—	LC-51	Two LANC terminals	FXE-120P
MJ-65	MJ-65	Not modified	FXE-100P
MM-27	MM-27	Slightly	FXE-100P/120P
RE-25	RE-31	Board name/Part number	FXE-100P/120P
RS-62	RS-62	RS-232C/422 selector deletion	FXE-100P/120P
VI-126	VI-144	In shape (Not modified in circuit)	FXE-100P/120P

SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety checks before releasing the set to the customer.

1. Check the area of your repair for unsoldered or poorly-soldered connections. Check the entire board surface for solder splashes and bridges.
2. Check the interboard wiring to ensure that no wires are "pinched" or contact high-wattage resistors.
3. Look for unauthorized replacement parts, particularly transistors, that were installed during a previous repair. Point them out to the customer and recommend their replacement.
4. Look for parts which, through functioning, show obvious signs of deterioration. Point them out to the customer and recommend their replace-ment.
5. Check the B+ voltage to see it is at the values specified.
6. Flexible Circuit Board Repairing
   - Keep the temperature of the soldering iron around 270°C during repairing.
   - Do not touch the soldering iron on the same conductor of the circuit board (within 3 times).
   - Be careful not to apply force on the conductor when soldering or unsoldering.

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

TABLE OF CONTENTS

1. GENERAL

Chapter 1 Outline
Features ····· 6
System Configuration Examples ····· 8
A-Roll and Cut Editing System ····· 8
A/B Roll Editing System (1) ····· 9
A/B Roll Editing System (2) ····· 9
Chapter 2 Location and Function of Parts
Control Panel ····· 10
Editing Control and VCR Manual Control Section ····· 10
Time Counter Displays ····· 13
LEARN Button, SCREEN Section and DIAL MENU Section ····· 14
EDIT PGM (Program) Section ····· 14
Video Switcher and Special Effects Control Section ····· 15
Audio Mixer and Special Effects Section ····· 20
Connector Panel ····· 21
Chapter 3 Preparations
Precautions ····· 23
Connectable VCRs ····· 24
VCRs Connectable Over the RS-422 Interface ····· 24
VCRs Connectable Over the RS-232C Interface ····· 25
Connections ····· 25
Player 1 and Player 2 VCR Connections ····· 25
Recorder VCR Connections ····· 26
Main Monitor and Program Monitor Connections ····· 27
Video Camera, CD Player and Microphone Connections 27
Titler, Computer and Editing Controller Connections ····· 28
Switch Settings and System Setup ····· 28
About the Status Display ····· 29
VCR Preparations ····· 32
LANC Interface VCR Preparations ····· 33
Connecting a VCR ····· 33
Making VCR Settings ····· 34
Setting Up the FXE-120/120P ····· 34
Executing the LEARN Function ····· 35
About the Display of Time Data ····· 36
Editing Precautions ····· 36
Chapter 4 Before Starting to Edit
Controlling the VCRs ····· 37
Selecting a VCR ····· 37
Controlling Tape Transport Manually ····· 37
Searching for a Scene With the Search Dial ····· 38
Controlling the Speed of Dynamic Tracking (DT) Playback ····· 39
Selecting Video and Audio Signals ····· 39
Default Input and Output Signals ····· 40
Selecting the Same Source for Video and Audio Inputs to a Bus ····· 40
Selecting Different Sources for Video and Audio Inputs to a Bus ····· 41
Monitoring Video and Audio Signals ····· 42
Adjusting Video and Audio Signals ····· 44
Adjusting Video Signals ····· 44
Adjusting Audio Levels ····· 45
Chapter 5 Editing Operations
Common Editing Procedures ····· 48
Selecting an Edit Mode ····· 49
Insert Mode ····· 49
Assemble Mode and First Edit Mode ····· 50
Selecting an Edit Type ····· 52
Cut Editing ····· 52
A-Roll Editing ····· 53
A/B Roll Editing ····· 53
Manual Effects and Sync Roll Editing ····· 54
Setting Edit Points ····· 54
Setting Edit Points ····· 54
Relation Between IN/OUT Points and Duration ····· 57
Checking, Cuing Up, Changing and Deleting Edit Points ····· 58
Selecting Special Effects ····· 61
Cut ····· 61
Dissolve ····· 61
Wipe ····· 63
Key ····· 70
Input Effects ····· 72
Setting the Transition Time ····· 78
Setting a Transition Path ····· 79
Checking FROM and TO Sources ····· 81
Preview — The Rehearsal Before Edit Execution ····· 81
Executing the Edit ····· 82
Sync Grade During Previews and Edit Execution ····· 84
Automatic Execution of Multiple Edits — Auto Assembly ····· 84
Reviewing the Edit ····· 85
Chapter 6 Advanced Editing
On the Fly Editing With Two Players — Sync Roll Editing ····· 86
Editing With Manual Special Effects ····· 87
Auto Transition Effects ····· 88
Setting Independent Video and Audio IN Points — Split Editing ····· 89
Editing Variable-Speed Playback — DMC Editing ····· 92
Editing With Fade In and Fade Out ····· 93
Fade In ····· 93
Fade Out ····· 94
Using Color Backgrounds ····· 95
Slide In and Slide Out Using a Color Background ····· 95
Recording Time Code — Time Code Insert ····· 96
Chapter 7 Managing Edit Data
About the EDL ····· 97
About Snapshots ····· 98
Using the EDL ····· 99
Registering an Edit in the EDL ····· 100
Recalling Edits From the EDL ····· 101
Revising and Deleting Edits ····· 101
Using Registered Edits in Automatic Editing ····· 102
Automatically Recalculating Recorder Edit Points for Registered Edits ····· 103
Transferring Edits To and From External Equipment ····· 104
EDL Output Format ····· 105
Chapter 8 Setup Menu
Setup Menu Item Table ····· 106
Using the Setup Menu ····· 107

Setup Menu Items ····108
Appendixes
Error Messages ····120
In Case of Trouble ····121
Audio Signal Flow ····122
GPI Interface Effect Timing ····123
Wipe Patterns ····124

2. DISASSEMBLY
2. REMOVAL OF REAR PANEL ····127
3. REMOVAL OF RE-31, RS-62, ED-41, MJ-65 BOARDS AND DC MOTOR ····127
CIRCUIT BOARDS LOCATION ····128

3. BLOCK DIAGRAMS
3-1. OVERALL BLOCK DIAGRAM (1) ····129
3-2. OVERALL BLOCK DIAGRAM (2) ····133
3-3. EDITOR BLOCK DIAGRAM ····136
3-4. AUDIO BLOCK DIAGRAM ····139
3-5. SWITCHER BLOCK DIAGRAM (1) ····143
3-6. SWITCHER BLOCK DIAGRAM (2) ····147
3-7. POWER BLOCK DIAGRAM ····150

4. PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS
4-1. FRAME SCHEMATIC DIAGRAM ····153
4-2. PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS ····156
DP-53 (DISPLAY) PRINTED WIRING BOARD ····156
DP-53 (DISPLAY) SCHEMATIC DIAGRAM ····159
CP-75 (MASTER CPU) SCHEMATIC DIAGRAM ····164
CP-75 (MASTER CPU) PRINTED WIRING BOARD ····169
AM-37 (AUDIO) PRINTED WIRING BOARD AND SCHEMATIC DIAGRAM ····174
AM-37 (AUDIO) SCHEMATIC DIAGRAM ····179
VI-144 (VIDEO INPUT) PRINTED WIRING BOARD ····183
DV-19 (VIDEO) SCHEMATIC DIAGRAM ····187
MM-27 (FRAME MEMORY) SCHEMATIC DIAGRAM ····212
MM-27 BOARD DIFFERENT PARTS LIST ····213
RS-62 (RS-232C/422) SCHEMATIC DIAGRAM ····213
RS-62 BOARD DIFFERENT PARTS LIST ····213
LC-51 (LANC JACK) PRINTED WIRING BOARD AND SCHEMATIC DIAGRAM ····214

5. IC DESCRIPTION
5-1. CPG, PTC, PIU, ICU (CP-75 BOARD IC518: CXD1500Q) ····215
5-2. LANC INTERFACE (CP-75 BOARD IC001, 051: HD6473837H) ····216
5-3. AUDIO EFFECT CONTROL (DP-53 BOARD IC802: CXP81124) ····217

6. EXPLODED VIEWS
6-1. MAIN SECTION ····218
6-2. DIFFERENT PARTS LIST ····219

7. ELECTRICAL PARTS LIST
7-1. DIFFERENT PARTS LIST ····221
7-2. ELECTRICAL PARTS LIST ····225

Features

The FXE-120/120P video editing system combines the functions of a video switcher, an audio mixer and a precision editing controller capable of executing A/B roll edits. Unlike conventional editing controllers, it does not require complicated connections to external equipment to achieve special effects such as mosaic and chroma-key insertion. All functions are available from an easy-to-use control panel. Connecting a single monitor allows you to view signals from each source at every stage of the editing process, from preview to program recording.

Following is a description of the principal features of this unit.

Supports multiple signal formats

Compatible with various VCRs

The unit is equipped with three RS-422 and three RS-232C interfaces for control of VCRs, enabling simultaneous control of up to three recorder and player VCRs. It also features two LANC interfaces for control of player VCRs. (About VCRs which can be connected to the unit over the LANC interface, refer to "Player VCRs Connectable Over the LANC Interface", given on a sheet supplied with the unit.)
There are I/O connectors for composite video and S-video, making it possible to connect VCRs using a variety of signal formats, such as Hi8 and S-VHS.

Three time code formats

In addition to CTL signals, SMPTE/EBU standard longitudinal time code (LTC), 8 mm time code, and RC time code can be used to specify locations on source and master tapes.

Editing functions

Versatile editing modes

- **A/B roll:** Uses two player VCRs for transition effects such as mix and wipe.
- **Self A-roll:** Uses one player, but allows mixes and wipes using normal playback and playback with input effects.
- **A-roll:** Uses one player, but mixes and wipes can be carried out using freeze frame playback from the recorder.
- **Sync roll:** Two players are run in synchronization, allowing you to switch between their playback as often as desired.
- **Manual effects:** Manual control allows you to vary the speed and timing of special effects at will.
- **Split editing:** Audio tracks can be mixed up to a minute sooner or later than video tracks.
- **DMC (Dynamic Motion Control) editing:** Permits editing of noiseless, variable-speed playback when operating with players that support Dynamic Tracking® (DT).

Precise edit points and transition times

Edit points can be set while viewing playback on the monitor or entered manually from the numeric keypad. Transition times for effects such as wipes and dissolves can also be set by dedicated buttons on the control panel or entered manually. Transition times range from 0 to 999 frames, for very precise effects.

Edit decision list

Auto assembly

Data for up to 99 edits can be saved in an internal edit decision list, allowing you to revise individual edits at any time for later assembly into a complete program.

Control panel snapshots

The current settings of the buttons in the video switcher and special effects sections of the control panel can be saved in memory together with edits. The state of the control panel can be instantly restored at any time by recalling the snapshot data.

Input and output of edit data

The unit is equipped with an RS-232C interface for input and output of edit decision list and snapshot data. The data can be transferred to and from personal computers or other external equipment.

Video switcher and special effects

Digital processing for high-quality video

Stable, high-quality video through 4-fsc (FXE-120) or 910 fH (FXE-120P) sampling of input video signals, 8-bit quantizing, and 4:1:1 digital processing in the signal processing section.

Digital frame memory

Both of the unit's signal buses (A and B) are equipped with digital frame memory. An internal synchronizer controls output from frame memory, for precise synchronization of A-bus and B-bus signals. This makes it possible to use VCRs without time base correction (TBC) as input sources.

Sophisticated digital effects

- **Mix:** In addition to normal dissolves, you can select mixes which apply effects such as mosaic, posterization and monochrome during the transition.
- **Wipe:** A total of 140 geometrical wipe patterns are available, along with wipe modes such as slide and scroll. Frequently used patterns may be assigned to the user-programmable buttons in the wipe pattern selection section.
  Wipe patterns can be given borders of a selected width and color.
- **Luminance key, chroma key:** Titles can be inserted into the video using camera output.

This section is extracted from FXE-120/120P instruction manual.

Input effects
Digital effects such as freeze frame, multi-screen and strobe may be applied independently to input video on bus A and bus B. Many of the digital effects can be used in combination.

Color correction
Color correction (white balance adjustment) can be carried out independently for A-bus and B-bus signals. Color correction parameters can be saved to memory and recalled when necessary.

Fade in/fade out
Fade in and fade out are available for use with black and white backgrounds.

Audio mixer/special effect functions

Audio mixer function
You can adjust the audio input level independently for each input signal, and adjust the level of audio output to the program recorder and monitor. You can also mix in audio from a microphone or auxiliary audio source for output as program audio.
The unit also supports a simulated stereo output function, which enables a monaural audio input to be output from both the left and right audio output channels as simulated stereo sound.

Audio special effects
You can apply digital processing to audio signals on bus A and bus B for independent surround sound effects. Key level control and other audio special effects can be added in real time.

Input/output channels

Video and audio input/output channels
As shown below, the unit features a rich variety of video and audio I/O channels.

Video input

Signal source	Signal format	
	S-video	Composite video
Player 1	1	1
Player 2	1	1
Recorder	1	1
Auxiliary source 1	1	1
Total	4	4

Video output

Output signal	Signal format	
	S-video	Composite video
Program signal 1	1	1
Program signal 2	1	1
Monitor signal	—	1
Total	2	3

Audio input

Signal source	Channels
Player 1	4
Player 2	4
Recorder	2
Auxiliary source 1	2
Auxiliary source 2	2
Microphone	1
Total	15

Audio output

Channels	Output signal
Program signal 1	2
Program signal 2	2
monitor signal	2
Total	6

Switches on the connector panel can be used to select input and output signal impedance to match the impedance of connected equipment.

Black burst output
Signals from the internal black burst signal generator may be output from four output channels, to synchronize source equipment from this unit.

Control functions

In addition to three RS-422, three RS-232C, and two LANC interfaces, the unit supports two GPI interfaces, allowing you to output status pulses at edit points in order to control external equipment, and to input timing pulses in order to control this unit.

Pinch-on delay measurement
Pinch-on delay (the time required for tape transport to start after a VCR receives a tape transport command) can be measured for up to three VCRs connected to this unit's RS-422, RS-232C, and LANC connectors. Measurement data is held in memory and used by the unit to adjust the timing of tape transport commands to the VCRs, for quick synchronization.

System setup menu

The system setup menu is displayed on the main monitor. It allows you to select operating modes and signal formats, and to configure the unit for use with various types of external equipment. Selections are made by rotating the search dial.

Optional accessories

The following cables are available for use with this unit.

RS-422 remote control cable

RCC-5G/10G/30G (9-pin, 5 m/10 m/30 m): Connect RS-422 connectors on this unit to VCR RS-422 connectors.

RS-232C remote control cable

SMF-3036C null modem cable (9-pin/25-pin): Connect RS-232 connectors (D-sub 9-pin) and EDL IN/OUT connectors (D-sub 9-pin) on this unit to RS-232C connectors (D-sub 25-pin) on VCRs and external equipment.

XLR 3-pin ↔ phono-jack cross cable

Connect audio I/O connectors (phono-jack) on this unit to XLR 3-pin connectors on external equipment.

- RK-5XLRM (male, 5 m)
- RK-5XLRF (female, 5 m)

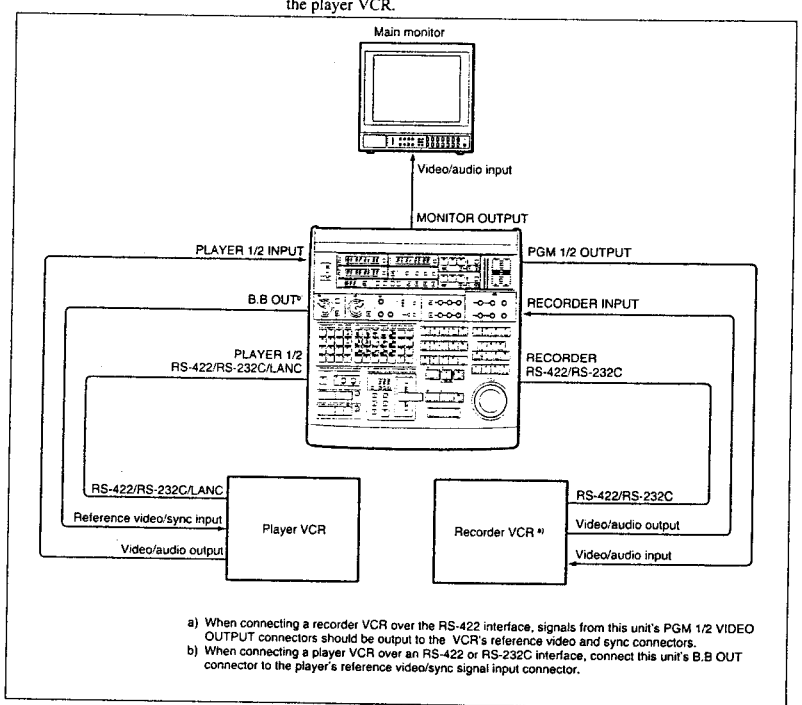
System Configuration Examples

This section presents three examples of editing systems which can be configured around this unit.
In the illustrations, connections between system components are illustrated by single lines, even if both audio and video cables are required. Arrows indicate the direction of the connection.

For more information, see "Connections" (page 3-5).

A-Roll and Cut Editing System

This example shows how to configure an editing system using only one player and one recorder.
In A-roll editing, freeze-frame playback from the recorder is read into bus B, allowing you to perform mix and wipe transitions with playback from the player VCR.

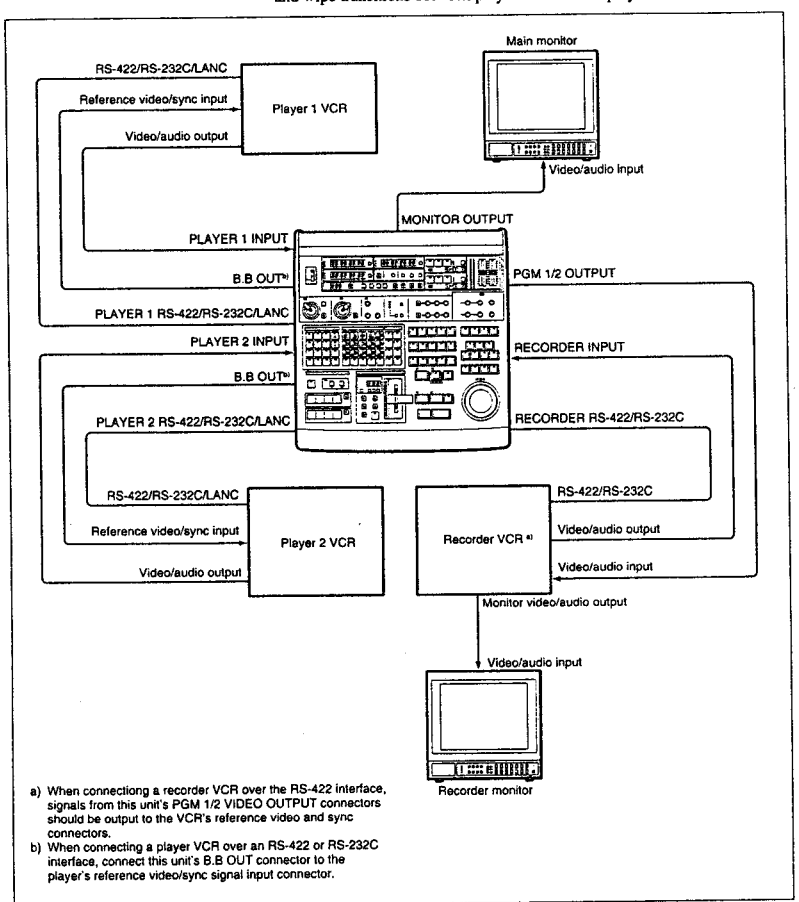


a) When connecting a recorder VCR over the RS-422 interface, signals from this unit's PGM 1/2 VIDEO OUTPUT connectors should be output to the VCR's reference video and sync connectors.
b) When connecting a player VCR over an RS-422 or RS-232C interface, connect this unit's B.B OUT connector to the player's reference video/sync signal input connector.

A-roll and cut editing system

A/B Roll Editing System (1)

This example shows how to configure an A/B roll editing system for mix and wipe transitions between playback from two players.

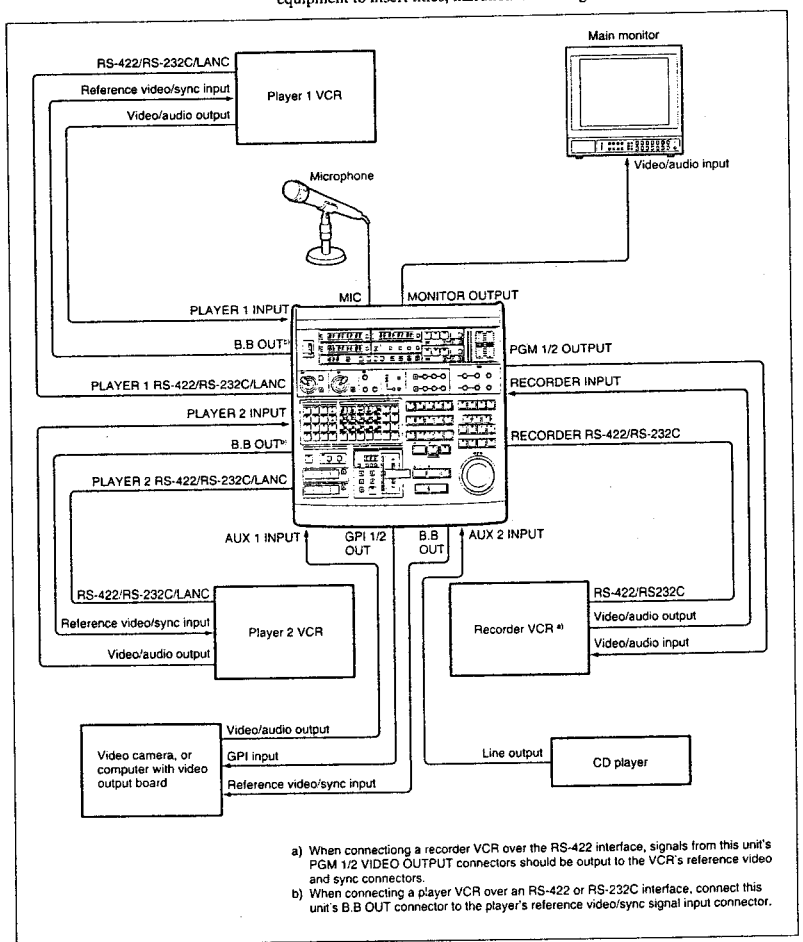


a) When connectiong a recorder VCR over the RS-422 interface, signals from this unit's PGM 1/2 VIDEO OUTPUT connectors should be output to the VCR's reference video and sync connectors.
b) When connecting a player VCR over an RS-422 or RS-232C interface, connect this unit's B.B OUT connector to the player's reference video/sync signal input connector.

A/B roll editing system (1)

A/B Roll Editing System (2)

This example shows how to configure an A/B roll editing system with equipment to insert titles, narration and background music.

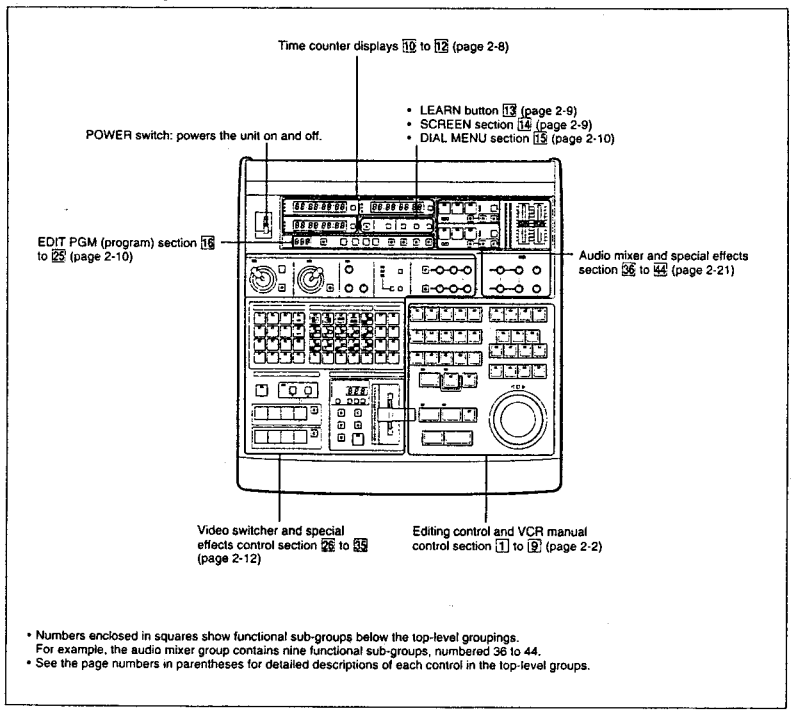


a) When connectiong a recorder VCR over the RS-422 interface, signals from this unit's PGM 1/2 VIDEO OUTPUT connectors should be output to the VCR's reference video and sync connectors.
b) When connecting a player VCR over an RS-422 or RS-232C interface, connect this unit's B.B OUT connector to the player's reference video/sync signal input connector.

A/B roll editing system (2)

Control Panel

The following figure shows the top-level grouping of controls on the control panel.

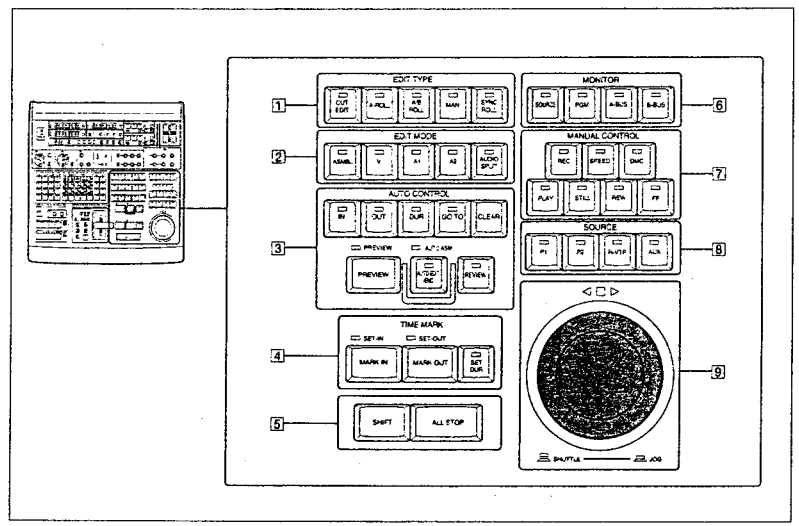


• Numbers enclosed in squares show functional sub-groups below the top-level groupings. For example, the audio mixer group contains nine functional sub-groups, numbered 36 to 44.
• See the page numbers in parentheses for detailed descriptions of each control in the top-level groups.

Control panel

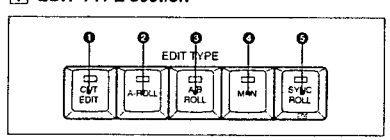
Editing Control and VCR Manual Control Section

This section includes controls for selecting the edit mode, setting edit points, and manual VCR control.



Editing control and VCR manual control section

1 EDIT TYPE section



This section includes controls for selecting the type of edit to be performed for each of the connected sources.

❶ CUT EDIT button
Press this button, turning it on, to carry out a cut edit.

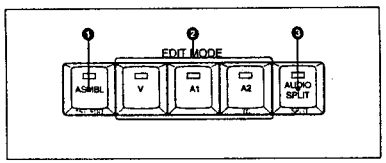
❷ A-ROLL button
Press this button, turning it on, to insert effects such as wipes and mixes when editing with one recorder and one player.

❸ A/B ROLL button
Press this button, turning it on, to carry out A/B roll editing using two players and a recorder.

❹ MAN (manual) button
Press this button, turning it on, for manual control of wipes and dissolves.

❺ SYNC ROLL (EOF) button
SYNC ROLL: Press this button, turning it on, for sync roll editing (editing on the fly) with two players.
EOF (End of File) (=SHIFT + SYNC ROLL) : Press this button, turning it on, to signal the end of edit data transfer to external equipment when you are editing in a mode in which edit data is output to external equipment each time you execute an edit.

2 EDIT MODE selection section



❶ ASMBL (1ST EDIT) button

ASMBL (assemble): To select assemble mode, press this button, turning it on. If any of the insert mode buttons ❷ are lit, press them until they are all flashing before pressing this button.

1ST EDIT (= SHIFT + ASMBL): To select first edit mode, press this button, which will start flashing. If any of the insert mode buttons ❷ are lit, press them until they are all flashing before pressing this button.

❷ Insert mode buttons (V, A1 and A2 (TC))

To select a signal to be used in insert mode, press the corresponding button, turning it on. More than one button may be lit.

V button: Video signal

A1 button: Audio channel 1

A2 (TC) button:

A2: Audio channel 2

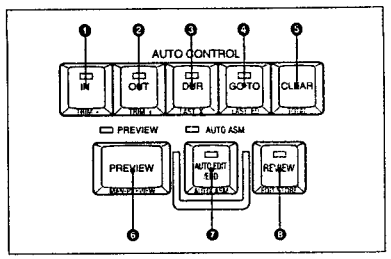
TC (= SHIFT + A2): Time code. Press this button so that it starts flashing to carry out time code insert editing.

❸ AUDIO SPLIT (SPLIT) button

AUDIO SPLIT: Press this button so that it starts flashing to split the audio and video IN points of the player or recorder.

SPLIT (= SHIFT + AUDIO SPLIT): In split editing, to check the player or recorder split offset, press this button, turning it on. The split offset will appear in the corresponding time counter display in seconds : frames format.

3 AUTO CONTROL section



This section includes the controls for setting, revising and confirming edit points, and for executing and reviewing automatic edits.

❶ IN (TRIM –) button

IN: Press this button to display the IN point of the VCR selected in the SOURCE section 8. The button lights, and the IN point is displayed in the corresponding time counter display 10, 11 or 12.

TRIM – (= SHIFT + IN): Press this button for fine adjustment of the time code value appearing in the time counter display of the selected VCR. Each time the button is pressed, the value is decremented by one frame.

❷ OUT (TRIM +) button

OUT: Press this button to display the OUT point of the VCR selected in the SOURCE section 8. The button lights, and the OUT point is displayed in the corresponding time counter display.

TRIM + (= SHIFT + OUT): Press this button for fine adjustment of the time code value appearing in the time counter display of the selected VCR. Each time the button is pressed, the value is incremented by one frame.

❸ DUR (LAST X) button

DUR (duration): Press this button to display the duration value for the selected VCR. The button lights, and the duration (hours:minutes:seconds:frames) appears in the corresponding time counter display.

LAST X (= SHIFT + DUR): Press this button to undo the effect of a correction to a time code value or to restore a time code value cleared by the CLEAR button.

❹ GO TO (LAST ED) button

GO TO: To cue up the IN point or OUT point on the selected VCR, press the IN button ❶ or OUT button ❷ as appropriate, followed by this button.

LAST ED (edit) (= SHIFT + GO TO): After previewing and revising an edit, and previewing the edit again, press this button to return to the state before the revisions.

❺ CLEAR (TOTAL) button

CLEAR: To delete the IN point, OUT point, or duration setting for the selected VCR, press the IN button ❶, OUT button ❷ or DUR button ❸ as appropriate, followed by this button. Additionally, press this button to exit from numeric keypad mode.

For more information about numeric keypad mode, see the descriptions in the TIME MARK section 4.

TOTAL (= SHIFT + CLEAR): Press this button to check the total duration of the edits carried out. The total is displayed in the RECORDER time counter display.

❻ PREVIEW (MAN-PREVIEW) button and PREVIEW indicator

PREVIEW: After completing the settings for an edit, press this button to preview the edit before execution. The PREVIEW indicator lights and a preview begins, allowing you to check both video and audio on the monitor from the preroll point to the postroll point.

MAN-PREVIEW (manual preview) (= SHIFT + PREVIEW): After creatinga an edit, press this button, turning it on, to check the edit results without using a recorder.

❼ AUTO EDIT/END (AUTO ASM) button and AUTO ASM indicator

AUTO EDIT/END: Press this button, turning it on, to execute an automatic edit. Press it again after beginning an automatic edit to end the edit.

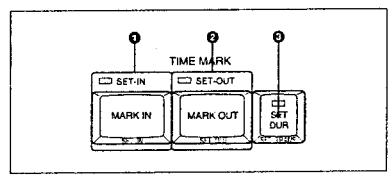
AUTO ASM (assemble) (= SHIFT + AUTO EDIT/END): Press this button to carry out continuous automatic recording. The AUTO ASM indicator lights, and continuous editing begins from an arbitrary edit stored in the edit decision list.

❽ REVIEW (EDIT STORE) button

REVIEW: Press this button, turning it on, to review the results of an edit. All segments on the recorder tape are played back from the preroll point to the postroll point.

EDIT STORE (= SHIFT + REVIEW): After creating an edit, press this button to store the edit without executing it. After the edit is stored, the system enters the same state as after an edit is executed.

4 TIME MARK section



❶ MARK IN (SET IN) button and SET IN indicator

MARK IN: Press this button to set an IN point while watching the playback of the VCR selected in the SOURCE section 8.

SET IN (= SHIFT + MARK IN): Press this button, turning the SET IN indicator on, to enter an IN point value using the numeric keypad 30.

❷ MARK OUT (SET OUT) button and SET OUT indicator

MARK OUT: Press this button to set an OUT point while watching the playback of the VCR selected in the SOURCE section 8.

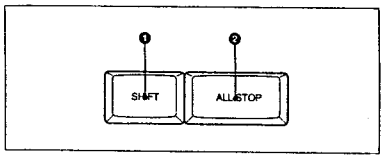
SET OUT (= SHIFT + MARK OUT): Press this button, turning the SET OUT indicator on, to enter an OUT point value using the numeric keypad 30.

❸ SET DUR (SET TRANS) button

SET DUR (duration): Press this button to enter a duration value using the numeric keypad 30.

SET TRANS (transition) (= SHIFT + SET DUR): Press this button to enter an effect transition time using the numeric keypad 30.

5 SHIFT button and ALL STOP button

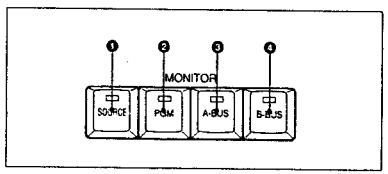


1 SHIFT button
When this button is held down, each of the buttons in the editing control and VCR manual control section has the effect indicated on the front side of the button.

For details see the descriptions of the individual buttons.

2 ALL STOP button
Press this button to stop all of the VCRs connected to the PLAYER 1 and 2 RS-422/RS-232C/LANC connectors and the RECORDER RS-422/RS-232C connectors.

6 MONITOR section



The buttons in this section select signals for output to the main monitor, connected to the MONITOR OUTPUT connectors on the connector panel. When you press them, the buttons light to indicate the selected signals.

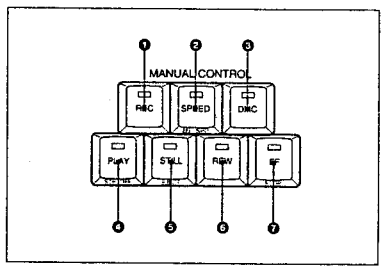
1 SOURCE button
Selects the source signals specified in the SOURCE section 8.

2 PGM (program) button
Selects the program signals. Editing and special effects signals are output to the main monitor as well as to the recorder and the program monitor connected to the PGM 1/2 OUTPUT connectors.

3 A-BUS button
Selects the audio and video on the A bus. Bus signals are output directly, without passing through frame memory.

4 B-BUS button
Selects the audio and video on the B bus. Bus signals are output directly, without passing through frame memory.

7 MANUAL CONTROL section



The buttons in this section provide manual control of the VCRs connected to the PLAYER 1 and 2 RS-422/RS-232C/LANC connectors and the RECORDER RS-422/RS-232C connectors.

1 REC (record) button
To record the signals output from the PGM 1/2 OUTPUT connectors without making any edit settings, **press the PLAY button while holding down this button and the SHIFT button.**

2 SPEED (MK-SPD) button
SPEED: In DMC (dynamic motion control) editing, press this button to check the initial playback speed set with the MK-SPD (= SHIFT + SPEED) button. The button lights, and the dynamic tracking playback speed is shown in the time counter display as a percentage of normal playback speed.
MK-SPD (mark speed) (= SHIFT + SPEED): Use this button to set the initial playback speed for DMC (dynamic motion control) editing.

3 DMC button
Press this button, turning it on, to carry out variable-speed playback on a player which supports dynamic tracking, or to control the playback speed during DMC editing.

4 PLAY (STB OFF) button
PLAY: To start playback, press this button, turning it on.
STB (standby) OFF (= SHIFT + PLAY): Press this button to switch the VCRs out of standby mode, so that the tapes do not remain wound on the head drums. Use this function to protect the tapes and heads when taking an appreciable break in the editing process.

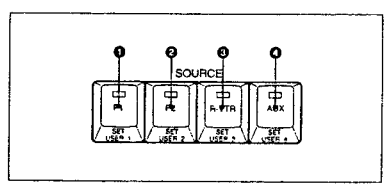
5 STILL (EJECT) button
STILL: Press this button, turning it on, to get a still picture during playback.
EJECT (= SHIFT + STILL): Press this button to eject the cassette from a VCR.

6 REW (rewind) button
Press this button, turning it on, to rewind the tape.

7 FF (STOP) button
FF (fast forward): Press this button, turning it on, to fast forward the tape.
STOP (= SHIFT + FF): Press this button to stop the tape.

8 SOURCE section

The buttons in this section select the VCRs controlled from this unit, the source affected by edit point operations, and the source signals sent to the MONITOR OUTPUT connectors. They are also used to assign wipe patterns to the USER1 to USER4 buttons in the WIPE PATTERN selection section.



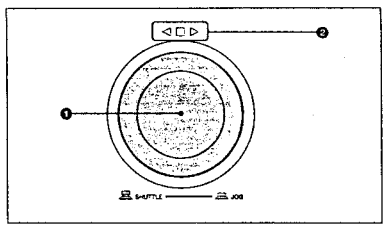
1 P1 (SET USER1) button
P1 (player 1): Press this button, turning it on, to select player 1 for control from this unit, or to select player 1 as the source for the monitor signal.
SET USER1 (= SHIFT + P1): To assign a wipe pattern to the USER1 button in the WIPE PATTERN selection section, press this button while holding down the SHIFT button, and then enter the pattern number from the numeric keypad.

2 P2 (SET USER2) button
P2 (player 2): Press this button, turning it on, to select player 2 for control from this unit, or to select player 2 as the source for the monitor signal.
SET USER2 (= SHIFT + P2): To assign a wipe pattern to the USER2 button in the WIPE PATTERN selection section, press this button while holding down the SHIFT button, and then enter the pattern number from the numeric keypad.

3 R-VTR (SET USER3) button
R-VTR (recorder): Press this button, turning it on, to select the recorder for control from this unit, or to select the recorder as the source for the monitor signal.
SET USER3 (= SHIFT + R-VTR): To assign a wipe pattern to the USER3 button in the WIPE PATTERN selection section, press this button while holding down the SHIFT button, and then enter the pattern number from the numeric keypad.

4 AUX (SET USER4) button
AUX (auxiliary): Press this button, turning it on, to select auxiliary source 1 for control from this unit, or to select auxiliary source 1 as the source for the monitor signal.
SET USER4 (= SHIFT + AUX): To assign a wipe pattern to the USER4 button in the WIPE PATTERN selection section, press this button while holding down the SHIFT button, and then enter the pattern number from the numeric keypad.

9 Search dial and playback direction indicators



❶ Search dial

The search dial is used for two purposes.

- It acts as a combined shuttle and jog control, for controlling variable-speed playback and searching for edit points.
- It is used to select menu items and set parameters in the setup menu.

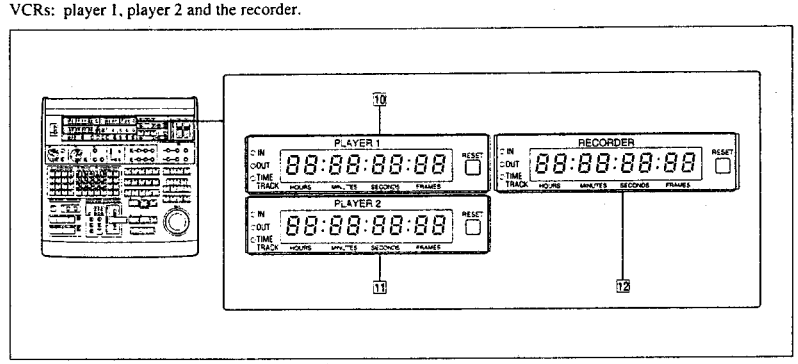
❷ Playback direction indicators

These indicators light to show the status or direction of playback.

□ : Lights during still playback.
▷ : Lights during forward playback.
◁ : Lights during reverse playback.

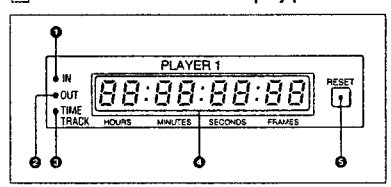
Time Counter Displays

These display time code values for each of the VCRs: player 1, player 2 and the recorder.



Time counter display panels

10 PLAYER 1 time counter display panel



❶ IN indicator

Lights when an IN point appears in the PLAYER 1 time counter display ❹. If the player 1 IN point is not set, this indicator flashes and "-- -- -- --" appears in the time counter display.

❷ OUT indicator

Lights when an OUT point appears in the PLAYER 1 time counter display ❹. If the player 1 OUT point is not set, this indicator flashes and "-- -- -- --" appears in the time counter display.

❸ TIME TRACK indicator

Flashes when player 1 is the VCR afffected by the time track function.

❹ PLAYER 1 time counter display

Displays time codes showing the tape position, an edit point position, tape speed during variable-speed playback, and other information relating to player 1. Also displays error codes to signal misoperations or improper settings.

❺ RESET button

When the CTL count is displayed in the time counter display, pressing this button resets it to "0:00:00:00".

11 PLAYER 2 time counter display panel

This panel has functions for player 2 corresponding to those in the PLAYER 1 time counter display panel 10.

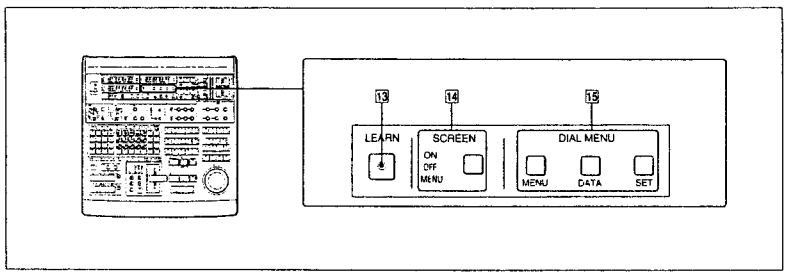
12 RECORDER time counter display panel

This panel has functions for the recorder corresponding to those in the PLAYER 1 time counter display panel 10.

It is also used to display the following data.

- The duration for the auxiliary source connected to the AUX 1 INPUT connector on the connector panel, or values input for auxiliary source 1 with the numeric keypad.
- The total duration for the edits carried out.

LEARN Button, SCREEN Section and DIAL MENU Section

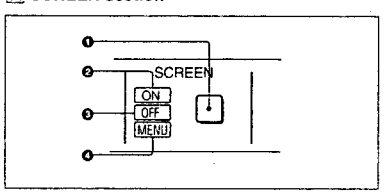


LEARN button, SCREEN section and DIAL MENU section

13 LEARN button

Pressing this button automatically measures, for each of the VCRs connected to the PLAYER 1 and 2 RS-422/RS-232C/LANC connectors and the RECORDER RS-422/RS-232C connectors, the time required for tape transport to begin after a tape transport command is received (the pinch-on delay). These values are held in memory and used by the system to control tape transport operations, for quick synchronization of the VCRs.

14 SCREEN section



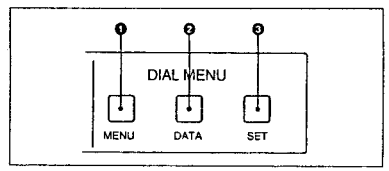
❶ SCREEN button
This button selects whether or not the monitor screen displays status information and setup menu items. Pressing this button cycles through the three possibilities indicated by the ON ❷, OFF ❸, and MENU ❹ indicators.

❷ ON indicator
When this indicator is lit, the monitor display includes status information.

❸ OFF indicator
When this indicator is lit, the monitor does not display status or menu information.

❹ MENU indicator
When this indicator is lit, the monitor display includes setup menu information, and the setup menu can be controlled using the DIAL MENU buttons 15 and the jog-mode (depressed) search dial.

15 DIAL MENU section



The buttons in this section are used for menu operations.

For details, see Chapter 8.

❶ MENU button
To change the menu item displayed on the main monitor, hold this button down and rotate the search dial in jog mode.

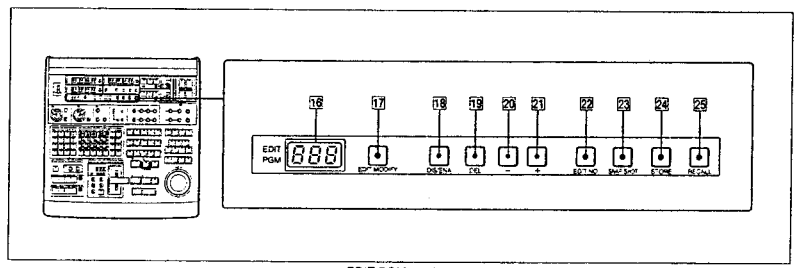
❷ DATA button
To change the setting of the currently displayed menu item, hold this button down and rotate the search dial in jog mode.

❸ SET button
Pressing this button confirms the flashing value on the screen as the new value of a setting, and saves it in memory.

EDIT PGM (Program) Section

Use the buttons in this section to modify edit and snapshot data stored in EDL memory.

For details, see Chapter 7.



EDIT PGM section

16 Edit number display

Displays the current edit number.

17 EDIT MODIFY button

Press this button, turning it on, to recall and modify edit and snapshot data stored in EDL memory.

18 DIS/ENA (disable/enable) button

Press to skip an edit that will not be needed during auto assembly recording.

19 DEL (delete) button

To delete an unneeded edit from memory, select the edit, then press this button.

20 '–' button

Press this button to select the edit immediately before the current edit. Each press of the button decrements the number appearing in the edit number display 16. Pressing the button when 001 is displayed selects the new edit number. However, if 99 edits have been registered, 001 cycles round to edit number 099. Holding this button down decrements the number in the edit number display continuosly.

21 '+' button

Press this button to select the edit immediately after the current edit, or hold it down to increment the edit number continuously. However, if 99 edits have been registered, edit number 099 cycles round to edit number 001.

22 EDIT NO. button
This button lights to indicate that edit data has been registered under the currently displayed edit number. If you press the RECALL button 25 to recall edit or snapshot data, this button begins to flash at the same time as the RECALL button. Pressing this button while it is flashing turns it off, allowing you to recall snapshot data only.

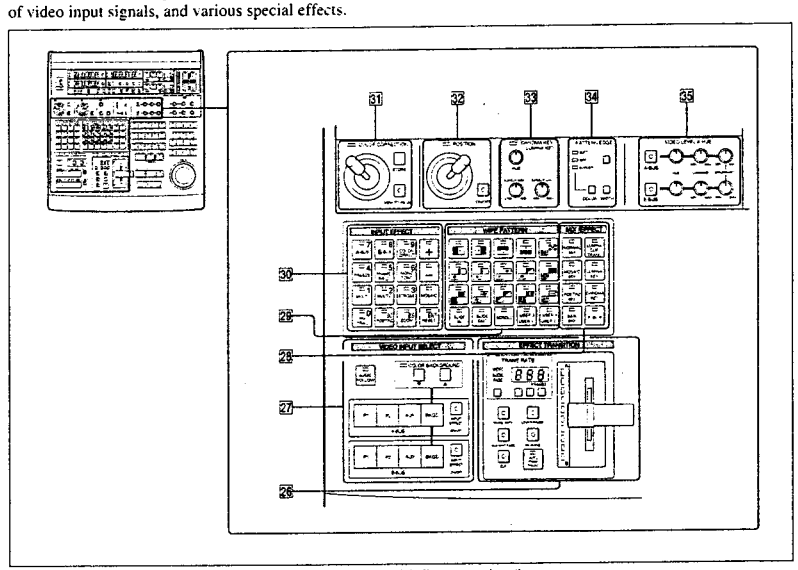
23 SNAPSHOT button
This button lights to indicate that snapshot data has been registered under the currently displayed edit number. If you press the RECALL button 25 to recall edit or snapshot data, this button begins to flash at the same time as the RECALL button. Pressing this button while it is flashing turns it off, allowing you to recall edit data only.

24 STORE button
After recalling and revising edit or snapshot data, press this button to store the revisions in the unit's internal memory. The button begins to flash. The revisions are stored when you press the button again while it is flashing.

25 RECALL button
Press this button to recall edit or snapshot data. Use the '–' button 20 or '+' button 21 to select the edit, then press this button so that it begins to flash. (At the same time, the EDIT NO. 22 and SNAPSHOT 23 buttons also begin to flash.) The recall operation is executed when you press the flashing RECALL button once more. The control panel settings immediately change to the settings for the recalled edit.
However
- Edit data is not recalled if the EDIT NO. button 22 is off.
- Snapshot data is not recalled if the SNAPSHOT button 23 is off.

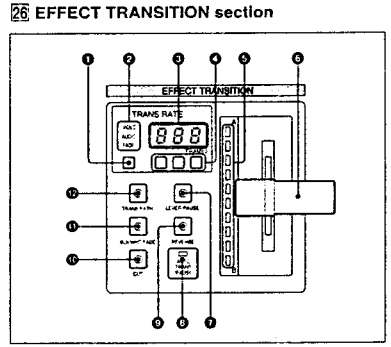
Video Switcher and Special Effects Control Section

This block of controls provides selection and control of video input signals, and various special effects.



Video switcher and special effects control section

26 EFFECT TRANSITION section



Use the controls in this section to execute transitions, and set the transition time.

❶ VIDEO/AUDIO/FADE button
Press this button to toggle the VIDEO, AUDIO, and FADE indicators on and off.
- If the AUDIO SPLIT button in the EDIT MODE section 2 is flashing (that is, if you are conducting a split edit), pressing this button lights one of the VIDEO, AUDIO, and FADE indicators, turning the others off.
- If the AUDIO SPLIT button is off, pressing this button toggles the VIDEO and AUDIO indicators together, turning the FADE indicator on or off.

❷ VIDEO, AUDIO, and FADE indicators
Press the VIDEO/AUDIO/FADE button to toggle these indicators on and off.

VIDEO/AUDIO: If you perform an operation which sets the transition time when both of these indicators are lit, the same transition time is set for both video and audio. Transition times for video only or audio only can be set only when the AUDIO SPLIT button in the EDIT MODE section is flashing.

FADE: When this indicator is lit, an effect transition time can be set for fade in/fade out.

Note
When the VIDEO and AUDIO indicators are both lit, independent transition times cannot be set for video and audio.

❸ TRANS RATE display
Displays the transition time in frames, as set by the three TRANS RATE buttons ❹ below.

❹ TRANS RATE buttons
Use these three buttons to set the transition time in frames (range: 0 to 999 frames).
Pressing one of these buttons increments the corresponding digit of the TRANS RATE display. Pressing it while holding down the SHIFT button [5] decrements the value.
The factory default setting for the transition time is 30 frames (FXE-120) or 25 frames (FXE-120P).

❺ Transition indicators
These show the progress of a transition. As the transition proceeds, progressively more of the indicators light. For example, when a transition from bus A to bus B is completed, only one indicator at the B-bus end is lit. When more than one indicator is lit, the video output is a combination of A-bus and B-bus signals.

❻ Fader lever
Use for manual control of a wipe or dissolve. The transition begins when you start to move the lever from one extremity, and ends when the lever reaches the opposite position. While the lever is in an intermediate position, the output is a combination of A-bus and B-bus signals.
The fader lever is disabled when the AUTO TRANS/PAUSE button ❽ is lit.

❼ LEVER PAUSE button
In auto transition mode, press this button to pause a wipe or dissolve at the position of the fader lever. The button lights. When the transition reaches the state represented by the position of the lever, this button begins to flash and the transition pauses. To continue the transition, either press the AUTO TRANS/PAUSE button ❽ or move the fader lever. Moving the fader lever takes the unit out of auto transition mode and puts it into manual transition mode.

❽ AUTO TRANS (transition)/PAUSE button
Pressing this button, turning it on, then pressing it once more executes an automatic transition using the transition time specified for a wipe or dissolve.
If you press this button while an auto transition is in progress, the transition is paused, and the button changes from lit to flashing. Pressing it again resumes the transition, and the button lights again. If you resume the transition by moving the fader lever, the unit leaves auto transition mode and enters manual transition mode.

❾ REVERSE button
When a wipe, luminance key or luminance clip transition is being used, pressing this button provides one of the following effects.
- For a wipe, the direction of movement of the wipe pattern is reversed.
- When the luminance key is selected, portions of the video outside of the specified luminance range are removed, instead of portions inside the range.
- For a luminance clip transition, the keying sequence from dim portions to bright portions is reversed, to key from bright portions to dim portions.

❿ CUT button
Press this button, turning it on, to switch instantaneously between A-bus video and B-bus video.

⓫ BLK/WHT (black/white) FADE button
Use this button to fade in from black (or white), or to fade out to black (or white).

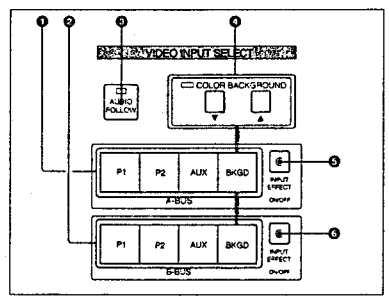
To fade in from black, or to fade out to black: Press this button, turn it on.

To fade in from white, or to fade out to white: Press this button while holding down the SHIFT button, turn it on.

⓬ TRANS (transition) PATH button
When you want to change the transition path, press this button, turning it on, and then press this button again while holding down the SHIFT button to select the desired transition path.

For a detailed description of the transition path, see "Setting a Transition Path" on page 5-63.

[27] VIDEO INPUT SELECT section



❶ A-BUS video input selection buttons
To select a video source for bus A, press one of these buttons, lighting it either red or orange. When the button lights red, it means that the corresponding video signal is currently being output from the PGM 1/2 OUTPUT connectors. A button lit orange indicates that the source is selected, but is not currently being output. If the button is flashing, it means that there is no video input for the corresponding input connector (the monitor shows a grey background).
The buttons select sources as follows.

P1 button: Player 1 (the VCR connected to the PLAYER 1 INPUT connectors)

P2 button: Player 2 (the VCR connected to the PLAYER 2 INPUT connectors)

AUX button: Auxiliary source 1 (the video/audio device connected to the AUX 1 INPUT connectors)

BKGD button: The output from the internal color background generator. This button takes precedence over the other A-bus video input selection buttons. When this button is lit red, even if another button is also lit red, the output from the PGM 1/2 OUTPUT connector is the color background. To select one of the other buttons, press the BKGD button, turning it off.

❷ B-BUS video input selection buttons
Use these buttons to select a video source for bus B. However, during execution of an edit while the A-ROLL button in the EDIT TYPE section [1] is lit, these buttons go out and stay off even if pressed.

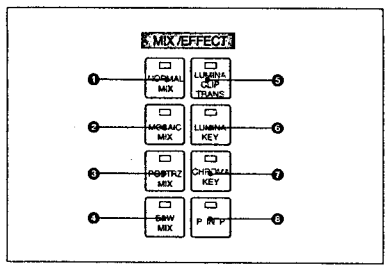
❸ AUDIO FOLLOW button
When this button is lit, selecting a video source as input to a bus automatically selects the same source for the audio input. In this case, when you carry out a wipe or dissolve, the audio signals change together with the video signals.
To select the audio source independently from the video source, press this button, turning it off, then select the audio source using the appropriate button in the AUDIO INPUT SELECT section [36].

❹ Background color selection buttons (▼/▲) and COLOR BACKGROUND indicator
When the BKGD button in the video input selection buttons ❶ and ❷ for either of the buses is lit, the COLOR BACKGROUND indicator also lights. In this state, pressing the ▼ or ▲ button cycles through the available selection of 25 background colors for bus A or bus B.

❺ A-BUS INPUT EFFECT ON/OFF button
When this button is lit, the effect selected in the INPUT EFFECT section [30] is applied to bus A.

❻ B-BUS INPUT EFFECT ON/OFF button
When this button is lit, the effect selected in the INPUT EFFECT section [30] is applied to bus B.

28 MIX/EFFECT selection section



These buttons select the type of mix or key effect used to combine the video signals on the A and B buses. To make the selection, press the desired button, turning it on.

For details, see "Dissolve" (page 5-27) and "Key" (page 5-44).

❶ NORMAL MIX button
Provides a simple mix of the two signals, so that a transition from bus A to bus B is a dissolve.

❷ MOSAIC MIX button
Provides a dissolve in which the video becomes a progressively coarser mosaic to the mid-point of the transition, then returns progressively to normal.

❸ POSTRZ (posterization) MIX button
Provides a dissolve which simplifies the luminance of the video signal. The luminance cycles through the steps 16→8→4→8→16.

❹ B&W (black and white) MIX button
Provides a dissolve in which the video is changed progressively to monochrome to the mid-point of the transition, then returns progressively to normal.

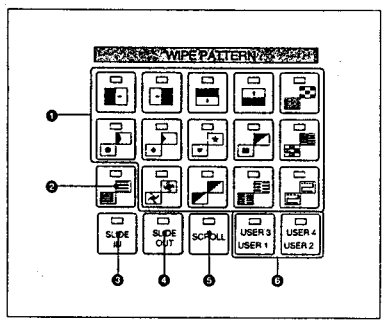
❺ LUMINA (luminance) CLIP TRANS (transition) button
Provides one type of luminance key. As the transition proceeds, portions of the old video of progressively increasing brightness are replaced by the new video.

❻ LUMINA (luminance) KEY button
Portions of B-bus video whose luminance (brightness) is equal to or higher than a specified reference level are replaced by A-bus video. The reference luminance level is specified using the controls in the CHROMA KEY/LUMINA KEY section 33.

❼ CHROMA KEY button
Portions of B-bus video of a specified hue are replaced by A-bus video. The reference hue is specified using the controls in the CHROMA KEY/LUMINA KEY section 33.

❽ P IN P (picture-in-picture) button
A small copy of the B-bus video is inserted in the A-bus video. The position of the insert picture can be controlled by the joystick in the POSITION section 32.

29 WIPE PATTERN selection section



The buttons in this section select the pattern to be used in a wipe effect. To make the selection, press the desired button, turning it on.

For details, see "Wipe" (page 5-30).

The following descriptions of buttons ❶ to ❻ assume you are making the transition from bus A to bus B.

❶ Buttons with symbols and arrows
- The symbols on the buttons represent the patterns with which the two video images are combined at an intermediate stage of the transition. The white portions correspond to A-bus video, and the blue or gray portions correspond to B-bus video. The arrows represent the wipe direction.
- Press the button alone to use the wipe pattern represented by the symbol in the lower left corner of the button.
- Press the button while holding down the SHIFT button to use the wipe pattern represented by the symbol in the upper right corner of the button.
- For the button 5 the video on the B bus rotates clockwise when you press the button alone, and counterclockwise when you press the button while holding down the SHIFT button.

❷ (split slide) button
The B-bus video slides in over A-bus video in the form of stripes. When the stripes reach the far side of the screen, the remaining stripes of A-bus video begin to slide off, finally leaving only B-bus video.
The vertical or horizontal direction of the B-bus video slide can be selected with the wipe buttons.

❸ SLIDE IN button
The B-bus video slides in over A-bus video. The vertical or horizontal direction of the B-bus video slide can be selected with the wipe buttons. If the and buttons are both lit, the slide direction changes to a slant.

❹ SLIDE OUT button
The A-bus video slides out, revealing the B-bus video. The vertical or horizontal direction of the A-bus video slide can be selected with the wipe buttons.

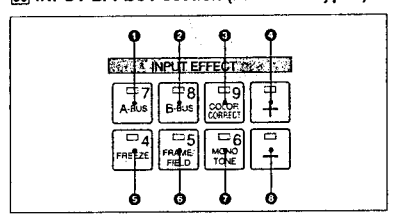
❺ SCROLL button
The B-bus video slides in, as A-bus video slides out. The vertical or horizontal direction can be selected with the wipe buttons.

❻ USER1/USER3 and USER2/USER4 buttons
You can press one of these buttons to apply the wipe pattern registered for the button.
When pressed alone, the USER1/USER3 button functions as the USER1 button. When pressed while holding down the SHIFT button, it functions as the USER3 button. In the same way, the USER2/USER4 button functions as the USER2 button when pressed alone and as the USER4 button when pressed while holding down the SHIFT button.
You can assign any favorite or commonly used wipe pattern to these buttons. The factory default assignments are shown below.

Button	Wipe Pattern Number
USER1 (USER1/3 pressed alone)	0031
USER2 (USER2/4 pressed alone)	0023
USER3 (= SHIFT + USER1/3)	0056
USER4 (= SHIFT + USER2/4)	0059

For more information about assigning wipe patterns to the user buttons, see "Assigning wipe patterns to the USER1 to USER4 buttons" (page 5-42).

30 INPUT EFFECT section (numeric keypad)



The buttons in this section select the digital effect applied to a bus when one of the A-BUS/B-BUS INPUT EFFECT ON/OFF buttons in the VIDEO INPUT SELECT section 27 is lit. You can press more than one of these buttons for combination effects.
The buttons in this section also double as a numeric keypad for entering time code and duration values.

❶ A-BUS button / 7 key
Press this button, turning it on, to apply the input effect to bus A.

❷ B-BUS button / 8 key
Press this button, turning it on, to apply the input effect to bus B.

Note
When setup menu item 119 INPUT EFFECT AUTO SELECT is set to ON, the input effect is applied automatically to the bus selected by the fader lever position.

For details, see Chapter 8.

❸ COLOR CORRECT button / 9 key
- Press this button, turning it on, to enable the controls in the COLOR CORRECTION section 31.
- To return color correction to its original state, either press this button once more, turning it off, or press the RESET button ⓰, turning it on.

❹ '+' key
This button is used together with other buttons in the INPUT EFFECT section to control effect selection.

For details, see the descriptions of the other buttons in this section.

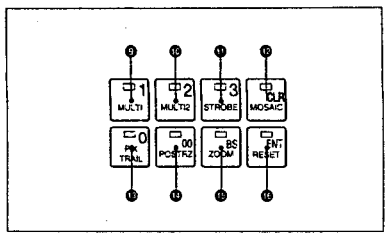
❺ FREEZE button / 4 key
- To freeze the video, press this button, turning it on.
- To return to normal video, either press this button once more, turning it off, or press the RESET button ⓯, turning it on.

❻ FRAME/FIELD button / 5 key
- When the FREEZE button ❺ is lit, this button lights automatically. When it is lit, the freeze operation captures a single field. Press this button, turning it off, to capture a whole frame (two fields) instead. A single-field freeze capture may result in less blurring if there is rapid motion in the picture.
- This button also lights automatically when the MULTI ❾, STROBE ⓫, MOSAIC ⓬ and ZOOM ⓯ buttons are lit. But in these cases pressing it has no effect.

❼ MONOTONE button / 6 key
- Press this button, turning it on, to obtain a monotone (monochrome) picture. When this button is lit, pressing the COLOR CORRECT button ❸, turning it on, allows you to use the COLOR CORRECTION section 31 to adjust the monochrome tint, and save and recall it in memory.
- To return to the original color state, either press this button once more, turning it off, or press the RESET button ⓰, turning it on.

❽ '–' key
This button is used together with other buttons in the INPUT EFFECT section to control effect selection.

For details, see the descriptions of the other buttons in this section.



❾ MULTI button / 1 key
When you press this button, turning it on, the screen is split into a 3 by 3 grid, and a reduced copy of the video appears in the top left corner. Unless you applied this effect to a freeze frame, the video continues to move. You can now paste successive copies of freeze frames in the nine boxes, as follows. When you press the '+' key ❹, the picture in the top left corner freezes, and the current video is shown in the top center box. Press it again, and this box freezes, and the current video moves to the upper right corner, and so on.
The '–' key ❽ has the same effect, except that the boxes are pasted in the reverse direction.

For details, see "Multiple screens" (page 5-49).

To return to normal video, either press this button once more, turning it off, or press the RESET button ⓰, turning it on.

❿ MULTI 2 button / 2 key
This button provides the same effect as the MULTI button ❾, except that the order in which the nine boxes are pasted is different.

For details, see "Multiple screens" (page 5-49).

To return to normal video, either press this button once more, turning it off, or press the RESET button ⓰, turning it on.

⓫ STROBE button / 3 key
Pressing this button, turning it on, freezes the video at a specified frame interval, giving a stroboscopic effect. You can adjust the frame interval using the '+' key ❹ and '–' key ❽.
To return to normal video, either press this button once more, turning it off, or press the RESET button ⓰, turning it on.

⓬ MOSAIC button / CLR (clear) key
- Pressing this button, turning it on, applies a mosaic grid to the picture. You can adjust the coarseness of the mosaic using the '+' key ❹ and '–' key ❽.
  To return to normal video, either press this button once more, turning it off, or press the RESET button ⓰, turning it on.
- In numeric keypad mode, press this key before pressing the ENT key ⓰ to clear a numerical value.

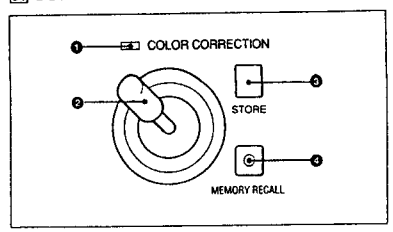
⓭ PIX TRAIL button / 0 key
Pressing this button, turning it on, produces an image trail of a certain length.
To return to normal video, either press this button once more, turning it off, or press the RESET button ⓰, turning it on.

⓮ POSTRZ (posterization) button / 00 key
- Pressing this button, turning it on, breaks the luminance down into a limited number of levels, producing a poster effect. You can select 16, 8 or 4 levels.
  To return to normal video, either press this button once more, turning it off, or press the RESET button ⓰, turning it on.
- Pressing this key in numeric keypad mode enters "00".

⓯ ZOOM button / BS (backspace) key
- Pressing this button, turning it on, provides a zoom function. Press the '+' key ❹ to expand the picture, and the '–' key ❽ to contract it.
  To return to normal video, either press this button once more, turning it off, or press the RESET button ⓰, turning it on.
- In numeric keypad mode, press this key before pressing the ENT key ⓰ to clear the most recently entered digit.

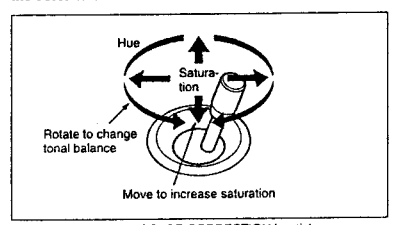
⓰ RESET button / ENT (enter) key
- When you press any of the other buttons in the INPUT EFFECT section, except for the A-BUS button ❶ and B-BUS button ❷, this button automatically goes off.
  Pressing this button, turning it on, turns off all the other buttons in the INPUT EFFECT section, and cancels their effect selections.
- In numeric keypad mode, pressing this key confirms the value entered and takes the unit out of numeric keypad mode.

31 COLOR CORRECTION section



❶ COLOR CORRECTION indicator
When you press the COLOR CORRECT button in the INPUT EFFECT section 30, turning it on, this indicator lights to inform you that it is possible to carry out color correction. Color correction is applied to the bus selected with the A-BUS and B-BUS buttons in the INPUT EFFECT section.

❷ COLOR CORRECTION joystick
When the COLOR CORRECTION indicator ❶ is lit, moving this joystick carries out the color correction. Rotating the stick cycles through all possible hues. Moving it further from the center position increases the color saturation.



Using the COLOR CORRECTION joystick

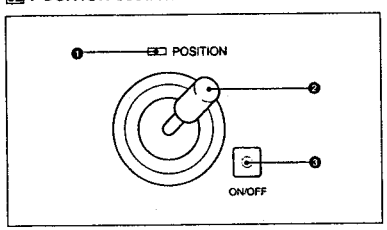
The correction range can be specified using item 405 COLOR CORRECTION ADJUSTMENT WIDTH in the setup menu.

For details, see Chapter 8.

❸ STORE button
To save the color settings selected by the COLOR CORRECTION joystick, hold down this button and press the MEMORY/RECALL button ❹.

❹ MEMORY/RECALL button
To save the color settings selected by the COLOR CORRECTION joystick, press this button while holding down the STORE button ❸. To recall the settings held in memory, press this button alone.

32 POSITION section

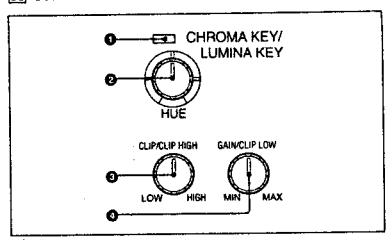


❶ POSITION indicator
Selecting a wipe pattern whose center is changeable or turning on the P IN P (picture-in-picture) button, automatically turns on this indicator, and enables the POSITION ON/OFF button ❸.

❷ POSITION joystick
When the POSITION ON/OFF button ❸ is lit, moving this joystick adjusts the position of some of the wipe patterns and the position of the insert picture in picture-in-picture mode (selected by pressing the P IN P button in the MIX/EFFECT section 28). However, the video quality of the insert picture in the picture-in-picture effect may deteriorate slightly when the insert is moved with the joystick.

❸ POSITION ON/OFF button
If you have selected a movable wipe pattern, pressing this button, turning it on, enables the POSITION joystick ❷.

33 CHROMA KEY/LUMINA KEY section



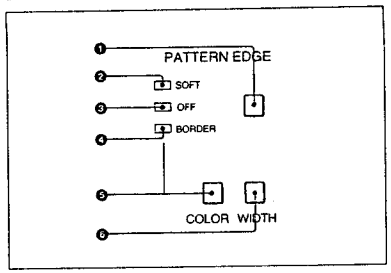
❶ CHROMA KEY/LUMINA (luminance) KEY indicator
When you press the LUMINA KEY button or the CHROMA KEY button in the MIX/EFFECT section 28, this indicator lights to inform you that the following three knobs are enabled.

❷ HUE knob
After pressing the CHROMA KEY button, turning it on, rotate this knob to select the chroma key hue.

❸ CLIP/CLIP HIGH knob
- After pressing the CHROMA KEY button, turning it on, rotate this knob to select the chroma key saturation.
- After pressing the LUMINA KEY button, turning it on, rotate this knob to specify the reference level of brightness for the key. Use this control for relatively bright portions of the video.

❹ GAIN/CLIP LOW knob
- After pressing the CHROMA KEY button, turning it on, rotate this knob to adjust the gain level of the key source signal, that is the signal used to fill the background, in this system on bus A.
- After pressing the LUMINA KEY button, turning it on, rotate this knob to specify the reference level of brightness for the key. Use this control for relatively dark portions of the video.

34 PATTERN EDGE section



❶ PATTERN EDGE button
Pressing this button cycles through the SOFT indicator ❷, the OFF indicator ❸, and the BORDER indicator ❹, lighting one and turning the others off.

❷ SOFT indicator
When this indicator is on, the edges of certain wipe patterns become softer, for a fuzzy effect.

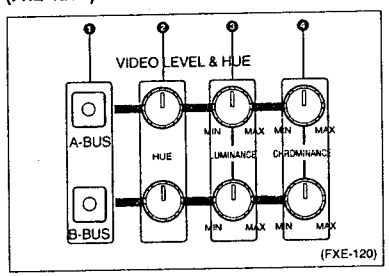
❸ OFF indicator
When this indicator is on, the wipe patterns have sharp edges.

❹ BORDER indicator
When this indicator is on, certain of the wipe patterns are given colored borders. You can adjust the border color with the COLOR button ❺, and the width with the WIDTH button ❻.

❺ COLOR button
When the BORDER indicator ❹ is lit, pressing this button cycles through the available selection of 15 border colors.

❻ WIDTH button
When the BORDER ❹ indicator is lit, pressing this button adjusts the width of the border in three steps.

35 VIDEO LEVEL & HUE section (FXE-120) VIDEO LEVEL & CHROMA PHASE section (FXE-120P)



❶ A-BUS/B-BUS buttons
Press the A-BUS button, turning it on, to make the adjustment for the A bus, and the B-BUS button, turning it on, to make the adjustment for the B bus. Press the button once more, turning it off, to return the unit to the factory default state.

❷ HUE knob (FXE-120)
Turn this knob to adjust the hue.

CHROMA PHASE knob (FXE-120P)
Turn this knob to adjust the subcarrier phase of the chrominance signal.

❸ LUMINANCE knob
Turn this knob to adjust the luminance (brightness).

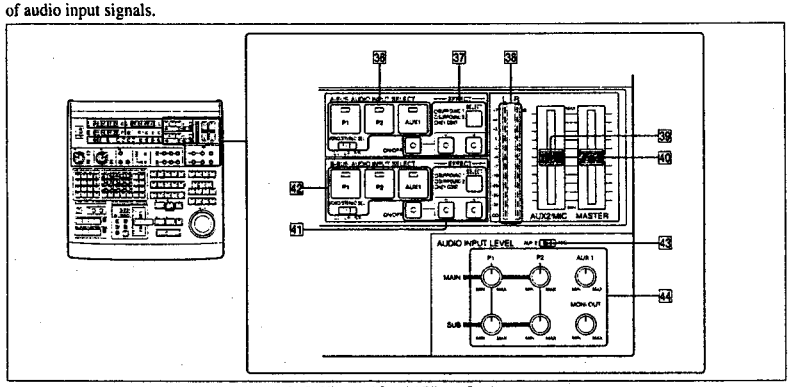
❹ CHROMINANCE knob
Turn this knob to adjust the saturation.

Note
The adjustment range for the HUE (FXE-120) or CHROMA PHASE (FXE-120P), LUMINANCE and CHROMINANCE knobs can be set in two steps using setup menu item 406 VIDEO LEVEL & HUE ADJUSTMENT WIDTH (FXE-120) or VIDEO LEVEL & CHROMA PHASE ADJUSTMENT WIDTH (FXE-120P).

For details, see Chapter 8.

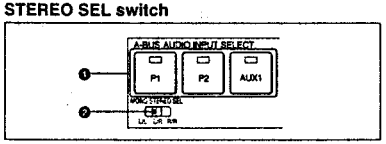
Audio Mixer and Special Effects Section

This block of controls provides selection and control of audio input signals.



Audio Mixer and Special Effects Section

36 A-BUS AUDIO INPUT section and MONO/STEREO SEL switch



❶ A-BUS audio source selection buttons

To select an audio source for bus A, independent of the A-BUS video source selected in the VIDEO INPUT SELECT section 27, extinguish the AUDIO FOLLOW button in the VIDEO INPUT SELECT section, then press one of these buttons, lighting it. The buttons select audio sources as follows.

- **P1 button:** Player 1 (the VCR connected to the PLAYER 1 AUDIO L/R INPUT connectors)
- **P2 button:** Player 2 (the VCR connected to the PLAYER 2 AUDIO L/R INPUT connectors)
- **AUX 1 button:** Auxiliary source 1 (video/audio device connected to the AUX 1 AUDIO L/R INPUT connectors)

When the AUDIO FOLLOW button in the VIDEO INPUT SELECT section is lit, the audio from the source selected by the video input selection button (other than the BKGD button) is automatically selected as the audio source for bus A.

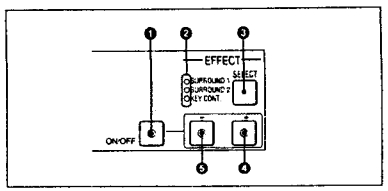
❷ MONO/STEREO SEL (select) switch

Use this switch to select the output destination for audio signals on bus A. You can select either left or right channel signals for output from both of the PGM 1/2 AUDIO L/R OUTPUT connectors and both of the MONITOR AUDIO L/R OUTPUT connectors *(see page 2-27)*.

- **L/L:** Left channel signals are output from both the AUDIO L and AUDIO R OUTPUT connectors. Right channels signals are not output, even if they are present.
- **L/R:** Left channel signals are output from the AUDIO L OUTPUT connectors and right channel signals are output from the AUDIO R OUTPUT connectors. This provides normal stereo output.
- **R/R:** Right channel signals are output from both the AUDIO L and AUDIO R OUTPUT connectors. Left channels signals are not output, even if they are present.

You can set this switch to L/L or R/R to obtain simulated stereo output when using a source such as a tape with timecode recorded in either the left or right audio channel.

37 A-BUS AUDIO EFFECT section



Use this section to apply special effects to the selected audio input signals on bus A.

❶ ON/OFF button

Press this button, turning it on, to apply the currently selected audio special effect (surround 1, surround 2, or key control) to the audio input signals on bus A.

❷ SURROUND 1, SURROUND 2, and KEY CONT. (control) indicators

These indicators light or flash to indicate the currently selected audio special effect. By default, the KEY CONT. indicator lights when the unit is powered on. Press the SELECT button ❸ to select another effect. Each press of the SELECT button selects an effect in the order surround 1 → surround 2 → key control → surround 1...

- **SURROUND 1 indicator:** This indicator lights when the surround 1 effect is selected. When the indicator is lit, you can press the ON/OFF button ❶, turning it on, to apply the surround 1 effect. The center of the sound field created by the left and right audio channels will be emphasized, for enhanced audio imaging. You can adjust the level of the effect in a stepwise manner with the '+' button ❹ and the '–' button ❺. This indicator flashes when the effect level is set to the middle of the adjustment range.
- **SURROUND 2 indicator:** This indicator lights when the surround 2 effect is selected. When the indicator is lit, you can press the ON/OFF button / ❶, turning it on, to apply the surround 2 effect. The peripheral areas of the sound field created by the left and right audio channels will be emphasized, for a spacious surround effect. You can adjust the level of the effect in a stepwise manner with the '+' button ❹ and the '–' button ❺. This indicator flashes when the effect level is set to the middle of the adjustment range.
- **KEY CONT. (control) indicator:** This indicator lights when the key control effect is selected. When the indicator is lit, you can press the ON/OFF button ❶, turning it on, to apply the key control effect. You can press the '+' button ❹ and the '–' button ❺ to adjust the audio key level in a stepwise manner. This indicator flashes when the key level is set to the middle of the adjustment range.

❸ SELECT button

This button selects an audio special effect. Each press of the button lights one of the audio special effect indicators ❷ in the order surround 1 → surround 2 → key control → surround 1... and selects the corresponding effect. To apply the selected effect, press the ON/OFF button ❶, turning it on.

❹ '+' (plus) button

This button adjusts the level of audio effect in 16 steps. Each press of the button raises the surround 1 or surround 2 effect level by one step, or raises the audio key level by one step. This button flashes when the maximum level is reached.

❺ '–' (minus) button

This button adjusts the level of audio effect in 16 steps. Each press of the button lowers the surround 1 or surround 2 effect level by one step, or lowers the audio key level by one step. This button flashes when the minimum level is reached.

38 Audio level meters

These meters show the audio levels of left and right channels of the audio output.

39 AUX (auxiliary) 2/MIC (microphone) fader

This fader controls the AUX 2 source or microphone audio mixing level. The AUX 2/MIC switch 43 determines which level is controlled. The further up the fader is, the higher the audio level.

40 MASTER fader

This fader controls the level of the audio output from the PGM 1/2 OUTPUT connectors. The further up the fader is, the higher the audio level.
When the PGM button in the MONITOR section 8 is lit, moving this fader also controls the audio level of output from the MONITOR OUTPUT connector.

41 B-BUS AUDIO EFFECT section

The buttons in this section have the same effect for audio on bus B as the buttons in the A-BUS AUDIO EFFECT section 37 for audio on bus A.

42 B-BUS AUDIO INPUT SELECT section and MONO/STEREO SEL (select) switch

These have the same effect for audio on bus B as the buttons in the A-BUS AUDIO INPUT SELECT section and MONO/STEREO switch 36.

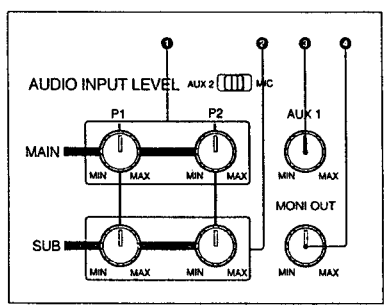
43 AUX 2/MIC switch

This switch selects the audio level adjusted by the AUX 2/MIC fader 39.

AUX 2: Audio input to the AUX 2 AUDIO L/R connectors on the connector panel

MIC: Audio input to the MIC connector on the connector panel

44 AUDIO INPUT LEVEL section



❶ P1 MAIN and P2 MAIN knobs
These knobs adjust the audio levels input to the PLAYER 1 and PLAYER 2 MAIN AUDIO L/R INPUT connectors.

❷ P1 SUB and P2 SUB knobs
These knobs adjust the audio levels input to the PLAYER 1 and PLAYER 2 SUB AUDIO L/R INPUT connectors.

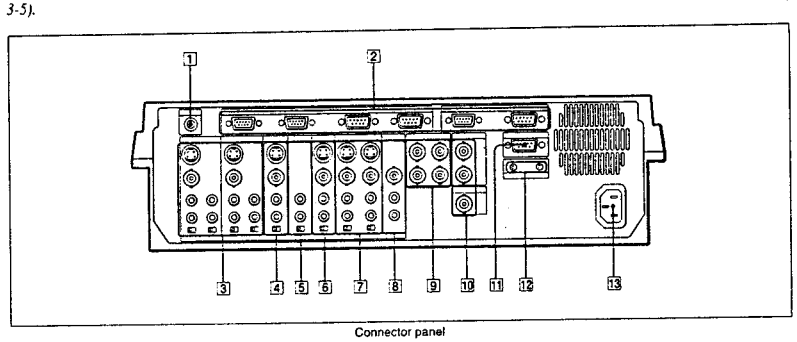
❸ AUX 1 knob
This knob adjusts the audio level input to the AUX 1 L/R INPUT connectors.

❹ MONI OUT (monitor output) knob
This knob adjusts the audio level output from the MONITOR AUDIO L/R OUTPUT connectors.

Each of the knobs ❶ through ❹ increases the volume when turned clockwise.

Connector Panel

For information about cables, see "Connections" (page 3-5).

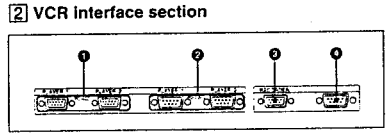


Connector panel

1 MIC (microphone) connector (monaural phone jack)

Connect a microphone. To adjust the audio input level from the microphone, set the AUX 2/MIC switch in the audio mixer section of the control panel to the MIC position, and move the AUX 2/MIC fader.

2 VCR interface section



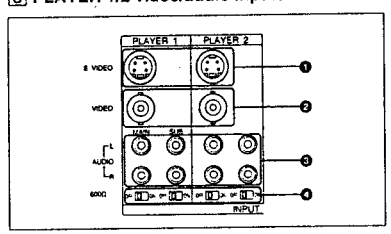
❶ PLAYER 1/2 RS-422 connectors (D-sub 9-pin)
When using VCRs with RS-422 interfaces for player 1 and 2, connect these connectors to the RS-422 connectors (D-sub 9-pin) on the VCRs.

❷ PLAYER 1/2 RS-232C connectors (D-sub 9-pin)
When using VCRs with RS-232C interfaces for player 1 and 2, connect these connectors to the RS-232C connectors (D-sub 25-pin) on the VCRs.

❸ RECORDER RS-422 connector (D-sub 9-pin)
When using a VCR with an RS-422 interface for the recorder, connect this connector to the RS-422 connector (D-sub 9-pin) on the VCR.

❹ RECORDER RS-232C connector (D-sub 9-pin)
When using a VCR with an RS-232C interface for the recorder, connect this connector to the RS-232C connector (D-sub 25-pin) on the VCR.

3 PLAYER 1/2 video/audio inputs



❶ PLAYER 1/2 S VIDEO INPUT connectors (mini-DIN 4-pin)
Connect to the S-video output connectors of player 1 and player 2. When using these connectors, under item 101 VIDEO INPUT SELECT in the setup menu set P1 and P2 to S-V.

For details, see Chapter 8.

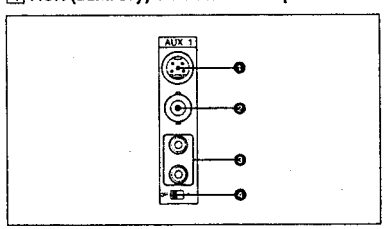
❷ PLAYER 1/2 VIDEO INPUT connectors (BNC)
Connect to the composite video output connectors of player 1 and player 2. When using these connectors, under item 101 VIDEO INPUT SELECT in the setup menu set P1 and P2 to V.

For details, see Chapter 8.

❸ PLAYER 1/2 AUDIO L/R INPUT connectors (phono jack)
Connect the left and right channel audio outputs from player 1 and player 2. Connect the channels which you want to use as the main audio input to the MAIN connectors, and those which you want to use as the subsidiary input to the SUB connectors.

❹ 600 Ω termination switches
Set these switches to correspond to the connector type on the VCR connected to the PLAYER 1/2 AUDIO L/R INPUT connectors ❸, as follows.
ON: 600 Ω termination. VCR connector is a Cannon XLR 3-pin connector.
OFF: 47 kΩ or above termination. VCR connector is a phono jack.

4 AUX (auxiliary) 1 video/audio inputs



❶ AUX 1 S VIDEO INPUT connector (mini-DIN 4-pin)
Connect to the S-video output connector of the video source (video camera, VCR, laser disc player, etc.) used as auxiliary source 1. When using this connector, under item 101 VIDEO INPUT SELECT in the setup menu set AUX to S-V.

For details, see Chapter 8.

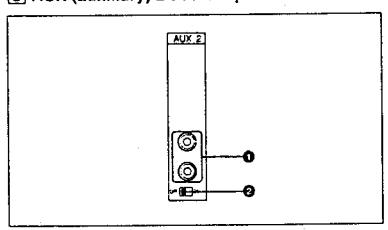
❷ AUX 1 VIDEO INPUT connector (BNC)
Connect to the composite video output connector of auxiliary source 1. When using this connector, under item 101 VIDEO INPUT SELECT in the setup menu set AUX to V.

For details, see Chapter 8.

❸ AUX 1 AUDIO L/R INPUT connectors (phono jack)
Connect the left and right channel audio outputs from auxiliary source 1.

❹ 600 Ω termination switch
Set this switch to correspond to the connector type on the source connected to the AUX 1 AUDIO L/R INPUT connectors ❸, as follows.
ON: 600 Ω termination. Source connector is a Cannon XLR 3-pin connector.
OFF: 47 kΩ or above termination. Source connector is a phono jack.

5 AUX (auxiliary) 2 audio inputs

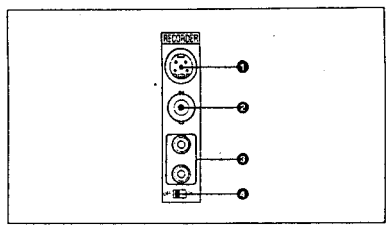


❶ AUX 2 AUDIO L/R INPUT connectors (phono jack)
Connect the left and right channel audio outputs from the audio source (CD player, tape recorder, etc.) used as auxiliary source 2. To adjust the audio input level from auxiliary source 2, set the AUX 2/MIC switch on the audio mixer section of the control panel to the AUX 2 position, and move the AUX 2/MIC fader.

❷ 600 Ω termination switch
Set this switch to correspond to the connector type on the source connected to the AUX 2 AUDIO L/R INPUT connectors ❶, as follows.
ON: 600 Ω termination. Source connector is a Cannon XLR 3-pin connector.
OFF: 47 kΩ or above termination. Source connector is a phono jack.

Connector Panel

6 RECORDER video/audio inputs



❶ RECORDER S VIDEO INPUT connector (mini-DIN 4-pin)
Connect to the S-video output connector of the recorder. When using this connector, under item 101 VIDEO INPUT SELECT in the setup menu set RECORDER to S-V. (The factory default setting is S-V.)

For details, see Chapter 8.

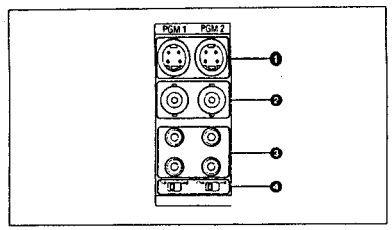
❷ RECORDER VIDEO INPUT connector (BNC)
Connect to the composite video output connector of the recorder. When using this connector, under item 101 VIDEO INPUT SELECT in the setup menu set RECORDER to V.

For details, see Chapter 8.

❸ RECORDER AUDIO L/R INPUT connectors (phono jack)
Connect the left and right channel audio outputs from the recorder.

❹ 600 Ω termination switch
Set this switch to correspond to the connector type on the VCR connected to the RECORDER AUDIO L/R INPUT connectors ❸.
ON: 600 Ω termination. Source connector is a Cannon XLR 3-pin connector.
OFF: 47 kΩ or above termination. Source connector is a phono jack.

7 PGM (program) 1/2 video/audio outputs



These connectors output the program output, including all edits and special effects. The PGM 1 and PGM 2 connectors provide exactly the same video and audio signals.

❶ PGM (program) 1/2 S VIDEO OUTPUT connectors (mini-DIN 4-pin)
Connect to the S-video input connectors of the recorder or program monitor.

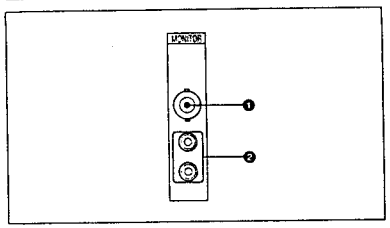
❷ PGM (program) 1/2 VIDEO OUTPUT connectors (BNC)
Connect to the composite video input connectors of the recorder or program monitor.

❸ PGM (program) 1/2 AUDIO L/R OUTPUT connectors (phono jack)
Connect to the left and right channel audio input connectors of the recorder or program monitor.

❹ –7.5 dB/+4 dB termination switches
Set the output level to –7.5 dBs[1] or +4 dBs for output of standard audio signals from the PGM 1/2 AUDIO L/R OUTPUT connectors ❸ depending on the recorder connector type.
–7.5 dB: –7.5 dBs output (when input impedance on recorder side is 47 kΩ). Set to this position when connector type is phono jack.
+4 dB: +4 dBs output (when input impedance on recorder side is 600 Ω). Set to this position when connector type is Cannon XLR 3-pin.

1) 0 dBs = 0.775 Vrms

8 MONITOR output section



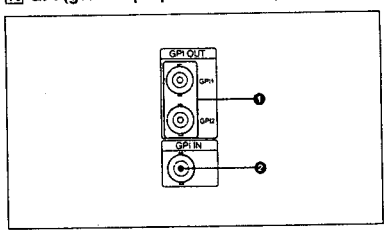
These connectors output the signals selected using the MONITOR section and SOURCE section of the control panel.

1 MONITOR VIDEO OUTPUT connector (BNC)
Connect to the composite video input connector of the video monitor used as the main monitor.

2 MONITOR AUDIO L/R OUTPUT connectors (phono jack)
Connect to the left and right channel audio input connectors of the main monitor.

9 B.B OUT (black burst output) connectors (BNC)
These connectors provide black burst signals from the internal sync generator. For video synchronization with sources, connect these to the reference video input, sync input, or GEN LOCK connectors of the source equipment.

10 GPI (general purpose interface) connectors



1 GPI 1/2 OUT connectors (BNC)
These connectors output timing pulses for controlling the operation of a titler, computer, or other external device. You can adjust the timing of the pulses in units of one frame under items 111 GPI 1 TIMING and 112 GPI 2 TIMING in the setup menu.

For details, see Chapter 8.

2 GPI IN connector (BNC)
When this unit is being controlled from external equipment such as another editor, connect this connector to the GPI output connector of the other equipment to input the timing pulses from the other equipment.

For details, see "GPI Interface Effect Timing" (page A-8).

11 EDL IN/OUT connector (D-sub 9-pin)
This connector transfers EDL (edit decision list) data. Connect it to the RS-232C connector of a computer or other external device equipped with an EDL management function.
Select input or output of the data under item 202 EDL SWITCH in the setup menu.

For details, see Chapter 8.

12 PLAYER 1/2 LANC connectors (stereo mini-minijack)
When using VCRs with LANC interfaces as players 1 and 2, connect to the LANC connectors of the VCRs.

13 AC IN connector
Connect the unit to a 120 V AC power supply using the AC power cord supplied.

Precautions

Safety precautions

Power
Operate the unit on:
• 120 V AC, 50/60 Hz (FXE-120)
• 220-240 V AC, 50/60 Hz (FXE-120P).
Do not place or drop heavy objects on the power cord. Protect the cord from damage. Using a damaged power cord is dangerous. Do not grasp the cord when pulling out of a power outlet. Grasp by the plug.

Do not disassemble
Do not open the cabinet. There is a danger of shock if you touch the parts inside the unit.

Do not drop foreign objects into the unit
Do not drop flammable or metal objects into the unit. Protect from water and liquids. Foreign objects dropped into the unit can cause malfunctions.

In case of trouble
If you notice unusual noises, smells, or smoke coming from the unit, turn it off immediately. Pull the power plug from the outlet, disconnect external equipment and contact your Sony dealer or qualified Sony service personnel.

Usage precautions

Operating and storage conditions
Avoid using or storing the unit in places which are
• very hot or cold (operating temperature range 5°C to 40°C or 41°F to 104°F).
• exposed to direct sunlight, or near heaters.
• damp or dusty.
• subject to severe vibrations.
• near equipment generating strong electromagnetic emissions.
• near transmitting stations generating strong radio waves.

Protect from shocks
Avoid dropping the unit or subjecting it to strong shocks.

Maintenance
Clean the cabinet and panels by wiping with a soft, dry cloth. Remove severe stains by wiping with a cloth moistened with a neutral solvent, then wipe with a soft, dry cloth. Do not clean with alcohol, benzine, thinner, or other volatile liquids. Doing so may damage the paint or finish.

Transporting the unit
When transporting the unit, protect from shocks by packing in the supplied carton or a comparable case.

Connectable VCRs

This unit automatically detects the VCR device type of connected VCRs[1] by monitoring status signals sent from the VCR over the RS-422, RS-232C, or LANC interface. This enables the unit to perform tape transport control for each VCR based on VCR device constants.
This section gives lists of VCRs that can be connected to this unit over the RS-422 or RS-232C interface.

About VCRs which can be connected to the unit over the LANC interface, refer to "Player VCRs Connectable Over the LANC Interface", given on a sheet supplied with this unit.

Device constants for the VCRs shown below are built into this unit. If you wish to connect a VCR that does not appear in the following tables, you will need to define device constants for that VTR using setup menu items 301, 302, and 303.

For more information about using the setup menu, see Chapter 8.

Note

For some VCRs, initial settings may need to be changed on the VCR side.

For details, refer to the the VCR's operation manual.

VCRs Connectable Over the RS-422 Interface

Sony VCRs

Recommended VCRs are shown in **bold** letters.

VCRs connectable to the FXE-120

Format/type	Model
8 mm	**EVO-9800/9800A, EVO-9850**
S-VHS	**SVO-5800, SVP-5600, SVO-9600, SVP-9000**
U-matic	VO-5800[a], VO-5850[a], **VO-9800, VO-9850,** BVU-800, BVU-820, BVU-850, BVU-870, BVU-900, BVU-920, BVU-950
Betacam	BVW-10, BVW-40, BVW-11, BVW-15, BVW-35, BVW-60, BVW-65, BVW-95, BVW-96, BVW-70, BVW-75, BVW-D75, PVW-2600, PVW-2800, PVW-2650, **UVW-1600, UVW-1800**
4:2:2 component digital	DVR-1000 (525), DVR-2000 (525), DVR-2100 (525)
Composite digital	DVR-10, DVR-18, DVR-20, DVR-28
Component Recording Video	LVR-5000/5000A, LVR-3000/3000AN, LVA-3700, LVA-7000

a) Interface Box IF-500 required.

1) In this manual the term "VCR" also refers to a video cassette player or a laser video disc recorder/player as the case may be.

VCRs connectable to the FXE-120P

Format/type	Model
8 mm	**EVO-9800P, EVO-9850P**
S-VHS	**SVO-5800P, SVP-5600P, SVO-9620, SVP-9020**
U-matic	VO-5800P[a], VO-5850P[a], **VO-9800P, VO-9850P,** BVU-800P, BVU-820P, BVU-850P, BVU-870P, BVU-900P, BVU-920P, BVU-950P
Betacam	BVW-10P, BVW-40P, BVW-11P, BVW-15P, BVW-35P, BVW-60P, BVW-65P, BVW-95P, BVW-96P, BVW-70P, BVW-75P, BVW-D75PS, PVW-2600P, PVW-2800P, PVW-2650P, **UVW-1600P, UVW-1800P**
4:2:2 component digital	DVR-1000 (625), DVR-2000 (625), DVR-2100 (625)
Composite digital	DVR-10P, DVR-18P, DVR-20P, DVR-28P
Component Recording Video	LVR-6000/6000A, LVR-4000AP, LVA-8000P, LVA-4700P

a) Interface Box IF-500 required.

Other VCRs

VCRs connectable to the FXE-120

Format/type	Model
Panasonic S-VHS	AG-7750, AG-7650, AG-DS850, AG-DS840
Panasonic M II	AU-665H, AU-65H, AU-62H, AU-63H, AU-66H, AU-55H, AU-W35H, AU-W32H, AU-W33H
JVC S-VHS	BR-S822, BR-S622, BR-S522, BR-S525, BR-S800, BR-S500

VCRs connectable to the FXE-120P

Format/type	Model
Panasonic S-VHS	AG-7750E, AG-7650E, AG-DS850E, AG-DS840E
Panasonic M II	AU-665HE, AU-662E, AU-65HE, AU-62HE, AU-63HE, AU-66HE, AU-55HE, AU-W35HE, AU-W32HE, AU-W33HE
JVC S-VHS	BR-S822E, BR-S622E, BR-S522E, BR-S525E, BR-S800E, BR-S500E

VCRs Connectable Over the RS-232C Interface

Sony VCRs

Recommended VCRs are shown in **bold** letters.

VCRs connectable to the FXE-120

Format/type	Model
8 mm	**EVO-9650, EVO-9720**
S-VHS	**SVO-9600**[a], **SVP-9000**[a]
Betacam	UVW-1200, UVW-1400

a) SVBK-180 RS-232C Interface Board required.

VCRs connectable to the FXE-120P

Format/type	Model
8 mm	**EVO-9650P**
S-VHS	**SVO-9620P**[a], **SVP-9020P**[a]
Betacam	UVW-1200P, UVW-1400P

a) SVBK-180P RS-232C Interface Board required.

Connections

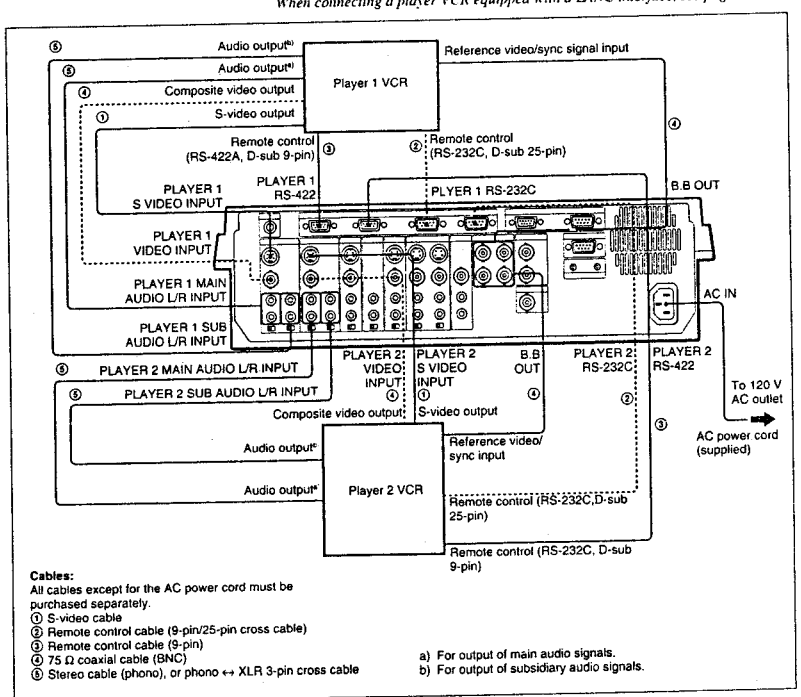
This section describes connections to VCRs and other external equipment.

For more information about configuring a system for a particular purpose, see "System Configuration Examples" (page 1-6).

Player 1 and Player 2 VCR Connections

To control player VCRs over the RS-422 or RS-232C interface, connect the VCRs as shown in the figure below.
Connect two players to perform A/B roll editing. Cut editing and A-roll editing are possible using one player.

When connecting a player VCR equipped with a LANC interface, see page 3-20.



Cables:
All cables except for the AC power cord must be purchased separately.
① S-video cable
② Remote control cable (9-pin/25-pin cross cable)
③ Remote control cable (9-pin)
④ 75 Ω coaxial cable (BNC)
⑤ Stereo cable (phono), or phono ↔ XLR 3-pin cross cable

a) For output of main audio signals.
b) For output of subsidiary audio signals.

Player 1 and player 2 VCR connections

Notes

- Depending on the connectors utilized here or on the connected equipment, settings may have to be changed on the connector panel or in the setup menu.

For details, see "Switch Settings and System Setup" (page 3-11).

- After connecting the player and recorder VCRs, press the LEARN button on the control panel.

For details about the LEARN button, see "Measuring pinch-on delay" (page 3-19).

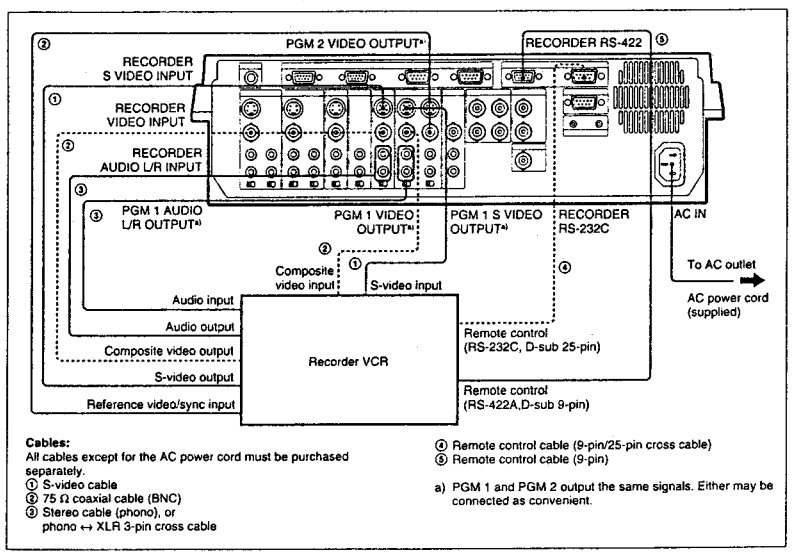
- Depending on the connected VCRs, device constants may have to be set using setup menu items 301 and 302.

For details, see Chapter 8.

Recorder VCR Connections

When the recorder's video and audio output connectors are connected to this unit's RECORDER INPUT connectors, freeze frame video may be input from the recorder to carry out mixes and wipes during A-roll editing. Also, signals can be input from the recorder in order to check the contents of the master tape on the main monitor.

For more information about monitor connections, see "Main Monitor and Program Monitor Connections" (page 3-8).



Cables:
All cables except for the AC power cord must be purchased separately.
① S-video cable
② 75 Ω coaxial cable (BNC)
③ Stereo cable (phono), or phono ↔ XLR 3-pin cross cable
④ Remote control cable (9-pin/25-pin cross cable)
⑤ Remote control cable (9-pin)

a) PGM 1 and PGM 2 output the same signals. Either may be connected as convenient.

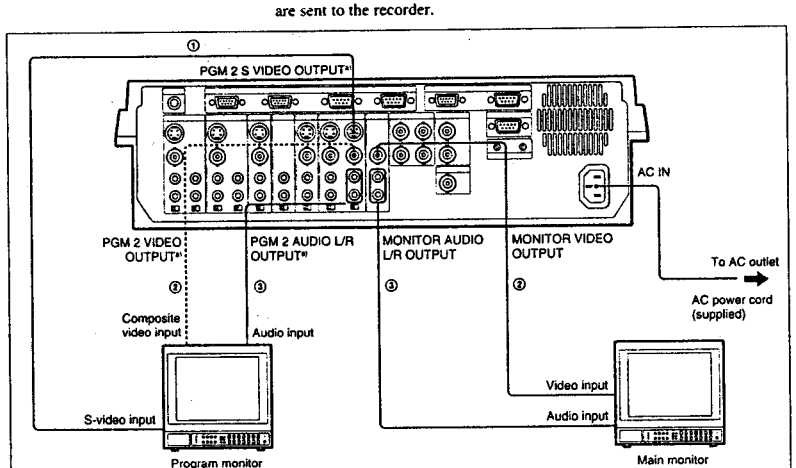
Recorder VCR connections

Notes

- As input to the recorder's reference video input connector, use signals from this unit's PGM 1/2 VIDEO OUTPUT connectors instead of signals from the B.B OUT connector.
- If the correct recorder freeze frame cannot be read in during A-roll editing, adjust the timing of freeze frame input under item 116 A-ROLL TIMING OFFSET in the setup menu.
- Depending on the connectors utilized here or on the connected equipment, settings may have to be changed on the connector panel or in the setup menu.
  For details, see "Switch Settings and System Setup" (page 3-11).
- After connecting the player and recorder VCRs, press the LEARN button on the control panel.
  For details about the LEARN button, see "Measuring pinch-on delay" (page 3-19).
- Depending on the connected VCR, a device constant may have to be set using setup menu item 303.
  For details, see Chapter 8.

Main Monitor and Program Monitor Connections

Connecting a monitor to each VCR allows you to monitor the video and audio of each VCR continuously. But this unit is also equipped with a MAIN MONITOR connector, which allows you to monitor preview signals, program signals, and the signals of the connected VCRs.
A program monitor may be connected in order to monitor the signals that are sent to the recorder.



Cables:
All cables except for the AC power cord must be purchased separately.
① S-video cable
② 75 Ω coaxial cable (BNC)
③ Stereo cable (phono)

a) PGM 1 and PGM 2 output the same signals. Either may be connected as convenient.

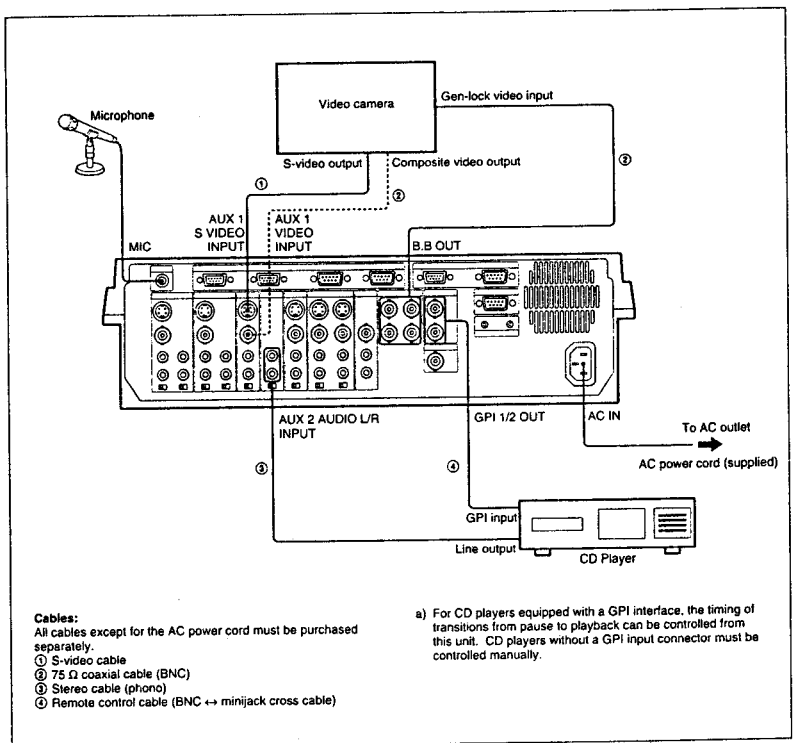
Main monitor and program monitor connections

Note

Depending on the connectors utilized here or on the connected equipment, settings may have to be changed on the connector panel or in the setup menu.

For details, see "Switch Settings and System Setup" (page 3-11).

Video Camera, CD Player and Microphone Connections



Cables:
All cables except for the AC power cord must be purchased separately.
① S-video cable
② 75 Ω coaxial cable (BNC)
③ Stereo cable (phono)
④ Remote control cable (BNC ↔ minijack cross cable)

a) For CD players equipped with a GPI interface, the timing of transitions from pause to playback can be controlled from this unit. CD players without a GPI input connector must be controlled manually.

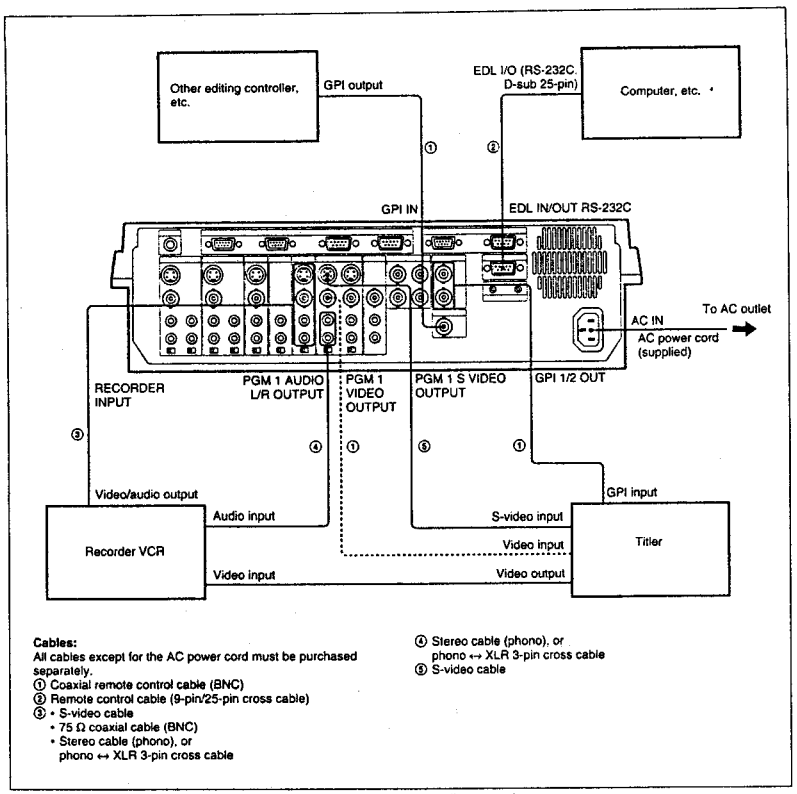
Video camera, CD player and microphone connections

Note

Depending on the connectors utilized here or on the connected equipment, settings may have to be changed on the connector panel or in the setup menu.

For details, see "Switch Settings and System Setup" (page 3-11).

Titler, Computer and Editing Controller Connections



Cables:
All cables except for the AC power cord must be purchased separately.
① Coaxial remote control cable (BNC)
② Remote control cable (9-pin/25-pin cross cable)
③ • S-video cable
  • 75 Ω coaxial cable (BNC)
  • Stereo cable (phono), or phono ↔ XLR 3-pin cross cable
④ Stereo cable (phono), or phono ↔ XLR 3-pin cross cable
⑤ S-video cable

Titler, computer and editing controller connections

Note

Depending on the connectors utilized here or on the connected equipment, settings may have to be changed on the connector panel or in the setup menu.

For details, see "Switch Settings and System Setup" (page 3-11).

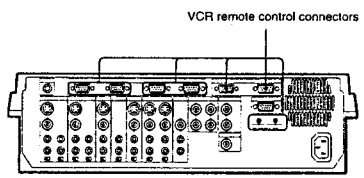
Switch Settings and System Setup

Depending on which connectors are used on the connector panel, and the type of connectors used by connected equipment, it may be necessary to set connector panel switches or change settings in the setup menu. This section explains the correct settings for each group of connectors.

For details regarding the setup menu, see Chapter 8.

VCR remote control connectors

Depending on the connector used to control the VCR, set setup menu item 102 REMOTE INTERFACE as follows.



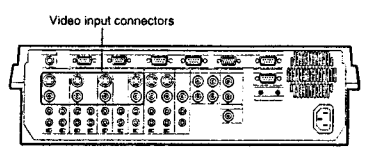
Connector used	Menu item 102 REMOTE INTERFACE settings
RS-422	RS422
RS-232C	19200 or 9600
LANC	LANC[a]

a) This setting is valid only for P1 (player 1) and P2 (player 2). Other menu settings are required to control a VCR connected to the LANC interface. For details, see page 3-22.

VCR remote control connectors and menu item 102 settings

Video input connectors

Set item 101 "VIDEO INPUT SELECT" in the setup menu as follows, depending on the connectors used for video input.



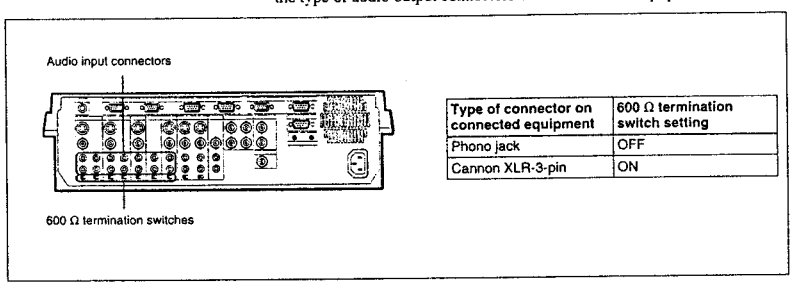
Connector used	Menu item 101 VIDEO INPUT SELECT setting
S VIDEO	S-V[a]
VIDEO	V

a) Factory preset to S-V

Video input connectors and VIDEO INPUT SELECT setting

Audio input connectors

Set the 600 Ω audio input termination switches as follows, depending on the type of audio output connectors on the connected equipment.

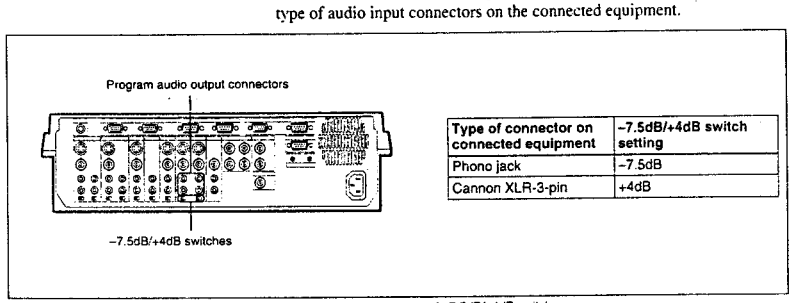


Type of connector on connected equipment	600 Ω termination switch setting
Phono jack	OFF
Cannon XLR-3-pin	ON

Audio input connectors and 600 Ω termination switches

Program audio output connectors

Set the –7.5dB/+4dB audio output switches as follows, depending on the type of audio input connectors on the connected equipment.

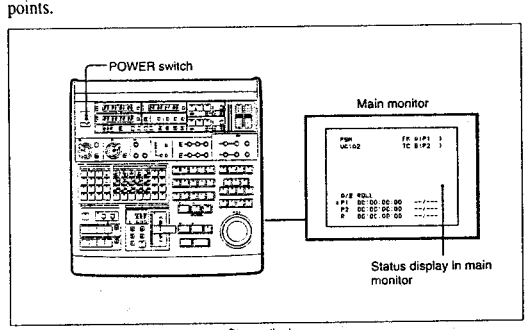


Type of connector on connected equipment	–7.5dB/+4dB switch setting
Phono jack	–7.5dB
Cannon XLR-3-pin	+4dB

Program audio output connectors and –7.5dB/+4dB switches

About the Status Display

When you turn on this unit and the main monitor, the following information is displayed to indicate the current edit mode, sources, and edit points.



Status display

Notes

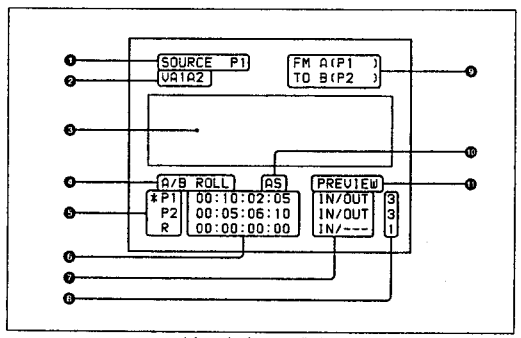
- Due to limitations of the connected VCRs, "V" may appear instead of "VA1A2" when you turn the unit on. In some cases, if tapes are write inhibited, nothing at all may appear.
- If you connect a VCR without time base corrector (TBC) circuits, the status display may fluctuate during still playback.

Interpreting the status display

This section lists the information which appears in each section of the status display.

- See the page numbers given in parentheses after each item for detailed explanations of display items or related procedures.
- The following abbreviations are used for sources and the recorder.

P1: Player 1 **R:** Recorder
P2: Player 2 **AUX:** Auxiliary source 1



Information in status display

❶ Monitor signal area *(page 4-11)*
Displays the source of the signals selected with the buttons in the MONITOR section and currently being output from the MONITOR OUTPUT connectors to the main monitor.

SOURCE P1 (P2, R-VTR, AUX): A source selected with the SOURCE button in the MONITOR section and the buttons in the SOURCE section
PGM: The same signals as are output from the PGM 1/2 OUTPUT connectors
A-BUS P1 (P2, AUX): The source selected for bus A
B-BUS P1 (P2, AUX): The source selected for bus B

❷ Edit mode area *(page 5-2)*
Displays the mode selected in the EDIT MODE section.

VA1A2: Signal channel(s) selected with insert mode buttons (V: Video channel. A1: Audio channel 1, A2: Audio channel 2)
ASMBL: Assemble mode
1ST-EDIT: First edit mode
TC-INS: Time code insert mode

❸ Error message area *(page A-1)*
Error messages are displayed here.

❹ Edit type area *(page 5-9)*
Displays the edit type selected in the EDIT TYPE section.

CUT P1 (P2, AUX): Cut edit using P1, P2, or AUX on bus A
A-ROLL P1 (P2, AUX): A-roll edit using P1, P2, or AUX on bus A
A/B ROLL: A/B roll edit
MANUAL: Manual effects edit
SYNC-ROLL: Sync roll edit

❺ Selected VCR *(page 4-1)*
- An asterisk (*) precedes the name of the selected VCR.
- When auxiliary source 1 is selected by pressing the AUX button in the SOURCE section, "R" changes to "AUX".
- During registration of a wipe pattern, the name of the button (SET USER1, SET USER2, etc.) pressed in the SOURCE section appears in the "R" line.

For more information about the status display in this case, see "Assigning wipe patterns to the USER1 to USER4 buttons" (page 5-42).

- During setting of a transition path, "TRANS PATH" appears in the "R" line.

For more information about the status display in this case, see "Setting a Transition Path" (page 5-63).

❻ Time data area *(page 5-13)*
- Displays the IN point, OUT point and duration for each VCR in (hours: minutes: seconds: frames) format.

Note
Time code displayed in this area may be slightly later than time code signals actually recorded on the tape. If you want to superimpose time code on signals sent to the MONITOR OUTPUT connectors for use in off-line editing, use a time code reader.

With the FXE-120, a period (.) is displayed instead of a colon (:) between minutes and seconds when drop-frame mode time code is found on the recorded tape.

Example: 00:10.02:05
↳ Drop-frame mode time code was found on the recorded tape. This period is displayed regardless of the setting of setup menu item 110 FRAME CONTROL MODE. (FXE-120 only)

A period (.) is displayed instead of a colon (:) between seconds and frames when time code has been interpolated from CTL signals because time code signals could not be read from the tape.

Example: 00:10:02.05
↑— Indicates that time code data has been interpolated from CTL signals.

For a VCR connected to the LANC interface, the period or colon between the seconds and frames fields indicates the VCR's counter mode. For details, see page 3-26.

A flashing period (.) is displayed at the end of the data of a player affected by the time track function.

Example: P1 00 : 10 : 02 : 05
P1 00 : 05 : 06 : 10 .
↑— A flashing period indicates that Player 2 is affected by the time track function.

For details, see "About the time track function" (page 5-71).

- Displays the split offset (distance between video IN point and audio IN point) during split editing.

For details, see "Setting Independent Video and Audio IN Points—Split Editing" (page 6-7).

- Displays initial DT speed in DMC editing.

For details, see "Editing Variable-Speed Playback—DMC Editing" (page 6-12).

- During registration of a wipe pattern, displays the wipe pattern number entered with the numeric keypad.

For more information about the status display in this case, see "Assigning wipe patterns to the USER1 to USER4 buttons" (page 5-42).

❼ Edit points area *(page 5-13)*

- Indicates whether or not IN/OUT points have been set for sources and recorder.
  IN/– – –: IN point is set.
  – –/OUT: OUT point is set.
  IN/OUT: IN and OUT points are set.
  – –/– – –: IN and OUT points are not set.
- Indicates the type of data displayed in the time data area ❻ when the IN, OUT or DUR button in the AUTO CONTROL section are pressed.
  IN: IN point is being displayed.
  OUT: OUT point is being displayed.
  DUR: Duration is being displayed.
- In numeric keypad mode, indicates the type of data being entered.
  SET IN: IN point is being entered.
  SET OUT: OUT point is being entered.
  SET DUR: Duration is being entered.
- During setting of a transition path, "TRANS PATH" appears in the recorder time data area.

For more information about the status display in this case, see "Setting a Transition Path" (page 5-63).

❽ Sync grade display *(page 5-72)*

Displays the synchronizing precision selected with item 104 SYNC GRADE in the setup menu, when setup menu item 114 SYNC GRADE DISPLAY is set to ON. Note that the factory default setting for this item is OFF, for no sync grade display.

1: ACCURATE
2: +/–1 FRAME
3: ROUGH
4: PREROLL & PLAY

For details, see Chapter 8.

❾ FROM source/TO source area *(page 5-66)*

When two sources are used, displays which signals are replaced during a transition.

FM: FROM source
TO: TO source
A: A bus
B: B bus
P1, P2, AUX: Source name

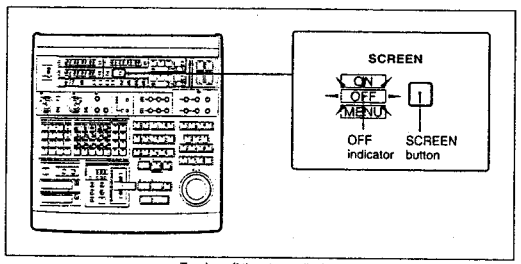
❿ "AS" area *(page 6-8)*

Shown when split editing (Audio Split) has been selected.

⓫ Operation area
Shows the current operation.
PREVIEW: Preview *(page 5-67)*
AUTO EDIT: Automatic edit execution *(page 5-69)*
REVIEW: Review *(page 5-75)*
AUTO ASM: Automatic assembly *(page 5-73)*

To turn off the main monitor status display

Press the SCREEN button until the OFF indicator lights.



Turning off the status display

VCR Preparations

This section explains preparations for controlling a VCR over the RS-422 or RS-232C interface.

See the next and following pages for preparations for controlling a VCR over the LANC interface.

After connecting the VCRs, carry out the following preparations.

For more information about settings on the VCR side, please consult your VCR manuals.

- Insert a cassette.
- Set the REMOTE/LOCAL switch to REMOTE.
- Adjust the following:
  Player VCRs: audio playback level, tracking, and skew
  Recorder VCR: video recording level, audio recording level, and tracking

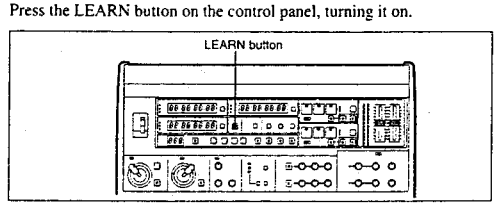
Measuring pinch-on delay

When a VCR receives a tape transport command, the tape does not begin to move instantly. A certain amount of time, called the pinch-on delay, is required for the mechanical process of initiating tape transport. This unit has a function for measuring the pinch-on delay for up to three VCRs, connected to the PLAYER 1/2 RS-422/RS-232C conectors and RECORDER RS-422/RS-232C connectors. Measurement data is held in memory and used by the unit to synchronize VCRs as quickly as possible.

After connecting the VCRs, be sure to measure the pinch-on delay as follows.

1 Insert tapes into each of the VCRs connected to the RS-422 and RS-232C connectors.

2 Press the LEARN button on the control panel, turning it on.



Measuring pinch-on delay

The VCRs begin to run, and the delay is measured automatically. The LEARN button flashes during the measurement. Measurement data is held in memory for about one week after the unit is turned off.
A check of preroll times which have been selected for each of the VCRs in the setup menu is also carried out. If the preroll times are too short, error codes are displayed in the corresponding time counter displays.

LANC Interface VCR Preparations

This section explains preparations for connecting a VCR equipped with a LANC interface to the PLAYER 1/2 LANC connectors of this unit, in order to use the VCR as a player VCR.

What is the LANC ⇵ interface?

LANC is an abbreviation of Local Application Control Bus System, a bi-directional protocol developed by Sony for the control of video equipment. The LANC interface is used primarily in consumer VCRs. It enables users of these VCRs to connect VCR remote control units, to connect two VCRs for simultaneous operation, and so forth. Depending on the VCR, the LANC connector is labeled LANC, CONTROL-L, or REMOTE.

Connectable VCRs

For information about specific VCRs equipped with LANC interfaces that can be connected to this unit, refer to "Player VCRs Connectable Over the LANC Interface", given on a sheet supplied with this unit.

Connecting a VCR

To connect a VCR equipped with a LANC interface to this unit, proceed as follows while consulting the figure on the next page.

Note

Before starting, refer to "Player VCRs Connectable Over the LANC Interface", given on a sheet accompanying this unit, to determine the connector type of your LANC VCR. If your VCR has a DIN 5-pin connector, you will need to obtain an optional DIN 5-pin ⟷ stereo mini miniplug adapter cable.

1 Check to be sure that this unit and the VCR are powered off.

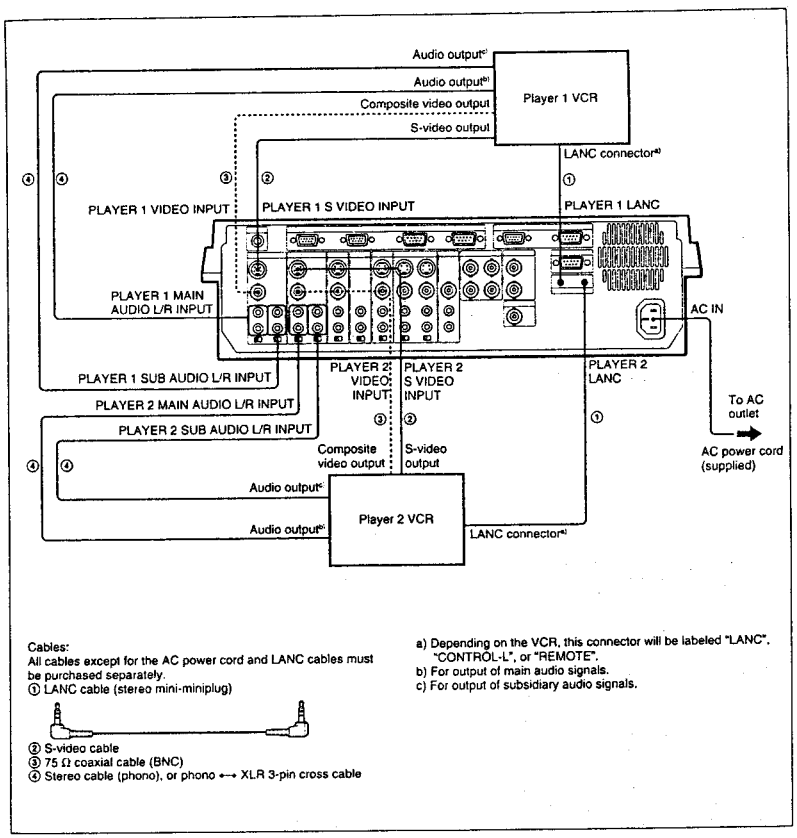
2 Using either the LANC cable supplied with this unit or an optional DIN 5-pin ⟷ stereo mini miniplug adapter cable, connect this unit's PLAYER1 or PLAYER 2 LANC connector to the VCR's LANC connector.

Note

Some VCRs are powered on automatically when you connect a LANC cable. This behavior is specified by the LANC protocol and is not a malfunction.

3 Using video and audio cables (both are options), connect this unit's player 1 or player 2 video input connectors and player 1 or player 2 audio input connectors to the VCR's video and audio output connectors.

4 After connecting the VCR, make the required VCR settings *(page 3-22)*, set up the FXE-120/120P *(page 3-23)*, and execute the LEARN function *(page 3-24)*.



Cables:
All cables except for the AC power cord and LANC cables must be purchased separately.
① LANC cable (stereo mini-miniplug)

② S-video cable
③ 75 Ω coaxial cable (BNC)
④ Stereo cable (phono), or phono ⟷ XLR 3-pin cross cable

a) Depending on the VCR, this connector will be labeled "LANC", "CONTROL-L", or "REMOTE".
b) For output of main audio signals.
c) For output of subsidiary audio signals.

Making VCR Settings

Make the following settings on a VCR or camcorder connected to this unit's PLAYER1 or PLAYER2 LANC connector.

- If you are connecting a VCR:
  Set the LANC mode (M/S) switch to S.
- If you are connecting a camcorder:
  — Set the power switch to Video or Playback.
  — If the video/audio output connector also functions as an input connector, set the video/audio input/output selector to "output".
- If your VCR is equipped with controls such as an EDIT switch and an audio output selector (HiFi/PCM/Normal), set them to the positions required for editing.
- If you are connecting a Betamax VCR, manually set the counter mode to linear (HMS) mode.

Notes

- This unit cannot control your VCR if the LANC mode switch is set to M. Be sure to set the switch to S. Some VCRs automatically return to M mode when the power cord is unplugged. After powering the VCR back on, be sure to set the mode back to S.
  For details about the LANC modes of your VCR, refer to the VCR's operation manual.
- If you execute an edit while menus and other displays are visible on the player VCR's output, that information will be recorded as part of the edit. Be sure to turn off all menus and other displays on the VCR's output before executing an edit.
- Some VCRs have a function to disable control by remote control units or key operations. If your VCR supports this function, you can prevent misoperations by using it to put the VCR into disable mode during control from this unit.

Setting Up the FXE-120/120P

After making the settings on the LANC VCR, power on this unit and make the following setup menu settings.

For more information about using the setup menu, see Chapter 8.

Menu item	Setting
102 REMOTE INTERFACE	Set P1 (player 1) or P2 (player 2) to LANC.
103 EDIT REFERENCE	When using a VCR that supports time code[a] to play back a tape with recorded time code, set PLAYER1 or PLAYER2 to LTC+/ VITC+. Otherwise set to CTL.
120 MARK IN CTL AUTO RESET	If you have set PLAYER1 or PLAYER2 in item 103 EDIT REFERENCE to CTL, you should normally set this item (120) to ON.
122 LANC FRAME CONTROL[b]	Normally, set P1 or P2 to AUTO. The DF and NDF settings are valid only when all of the following conditions are met. • Menu item 103 EDIT REFERENCE is set to LTC+/ VITC+. • The VCR supports time code[a] and the counter mode is set to time code display. • A tape containing recorded time code is loaded in the VCR.
106 RS422 PREROLL TIME	Set the preroll time to a value of 5 seconds or above.

a) To determine if your VCR supports time code, refer to the tables in "Player VCRs Connectable Over the LANC Interface", given on a sheet accompanying this unit. VCRs that support time code have the value "TIME CODE" in the "Counter format" column.

b) FXE-120 only.

If you set item 102 REMOTE INTERFACE to LANC, items 104 and 108 are set automatically as follows.

Menu item	Setting
104 SYNC GRADE	Set automatically to PREROLL&PLAY
108 TC JUMP	Set automatically to INHIBITED

When you power this unit on

If you power this unit on while the VCR is powered on, the counter mode is set automatically. It changes automatically to time code display mode if the VCR supports time code, and to linear mode if the VCR does not support time code. (However, this function is not supported by Betamax VCRs.) If a tape is loaded in the VCR, the VCR automatically enters "still" (playback paused) mode.

Executing the LEARN Function

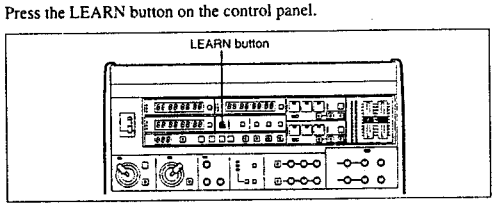
When you first connect a VCR to this unit's PLAYER 1 or PLAYER 2 LANC connector, and when you change the connected VCR, you should always execute the LEARN function to check the pinch-on delay and other VCR characteristics.
Learn data for each of the PLAYER 1 and PLAYER 2 connectors is stored in this unit's memory. Therefore you should always execute the LEARN function when you change the connections, even if it is only to switch the connections after connecting two VCRs of the same model.

To execute the LEARN function, proceed as follows.

1 Prepare a tape that meets the following conditions.
- Several minutes or more of video signals are recorded on the tape. (It does not matter if no audio signals are recorded.)
- If the VCR supports time code, time code should always be recorded on the tape.

2 Set the tape in the VCR and cue it up to a point about 1 minute past the point where recording starts.

3 Press the LEARN button on the control panel.



The LEARN button begins to flash and the LEARN function is executed in two stages.
In the first stage, this unit checks the mechanical characteristics of the VCR by causing it to execute playback, pause, fast forward and other operations. (The operations differ according to the VCR.)
In the second stage, the pinch-on delay[1] of all connected VCRs is measured.

After two or three minutes, the LEARN function finishes, the learn data is stored in the unit's memory, and the LEARN button changes from flashing to lit. Data stored in memory is retained even after you power this unit off.

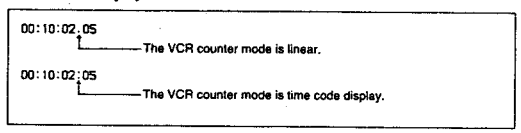
1) Pinch-on delay: The time required for tape transport to actually begin after a VCR receives a tape transport command.

Points to observe about the LEARN function

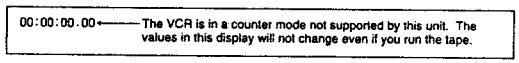
- For Betamax VCRs, always check to be sure that the VCR's counter mode is set to linear mode before executing the LEARN function. If it is set to remaining time display, manually change it to linear mode.
- Never operate the VCR while the LEARN function is being executed. Doing so can cause errors and result in inaccurate measurements.
- Whenever possible, use a tape recorded by the VCR you are testing. Do not use tapes such as the following, or other tapes with problematic recording conditions.
  - — Tapes on which the recording mode changes (LP ⟷ SP, βI ⟷ βII ⟷ βIII, etc.) midway through the tape
  - — Tapes on which the recording is not continuous
  - — Tapes on which the video synchronization signals are unstable
  - — Tapes with frequent dropouts
  - — When testing a VCR that supports time code, tapes without continuous time code or tapes with time code recorded on only part of the tape
- If time code cannot be read because of poor recording conditions on the tape, the LEARN button may go out before the measurements finish. If this happens, execute the LEARN function again.
- **VCRs which are automatically powered off during execution of the LEARN function cannot be connected for use with this unit.**
- If no measurement data on the characteristics of a VCR is stored in memory after execution of the LEARN function, the functions which you can execute on that VCR by using the search dial of this unit are limited to playback, playback pause, and picture search.
- Even after execution of the LEARN function, a VCR connected to this unit over the LANC interface will not deliver the same degree of editing precision and responsiveness as a VCR connected over the RS-422 or RS-232C interface. Depending on the type of LANC VCR, the LEARN function may fail to detect some of the variable playback speeds provided by operations on the VCR's main unit or remote control unit. In this case, you cannot use this unit's search dial to execute jog and shuttle operations on that VCR.

About the Display of Time Data

In the display of time data by this unit, a period (.) between the seconds and frame fields normally signifies that the time data has been interpolated from CTL signals *(for details see page 3-16)*. However, for VCRs connected over the LANC interface, a period between the seconds and frames fields means that the VCR counter mode is linear. A colon (:) between the seconds and frames fields means that the VCR counter mode is time code display.



If the VCR counter mode is neither time code display nor linear, a period is displayed between the seconds and frames fields, and the data in all fields is 0.



Editing Precautions

About professional 8mm time code

Consumer VCRs designed for RC time code cannot read out professional 8mm time code. Therefore, this unit cannot control such a consumer VCR when a tape containing professional 8mm time code is loaded in it.

About VCR counter modes

This unit supports two VCR counter modes: linear mode and time code display mode. It does not support operation under any other counter modes. If you have changed the counter mode to display the time remaining on the tape, be sure to change the mode manually back to the original counter mode.

To enable automatic counter mode switching, both this unit and the VCR must be powered on. (Note that Betamax VCRs do not support automatic counter mode switching.)

Editing in linear time counter mode

When you edit in linear time counter mode, frame information is disregarded. If you input edit point data with a value other than 00 in the frames field, editing precision may decline and errors may occur during cue up, automatic edit, and preview operations. To set an IN point, make sure that the setup menu item 120 MARK IN CTL AUTO INSET is set to ON, and press the MARK IN button. When you press the button, the IN point will be set to 00:00:00:00.

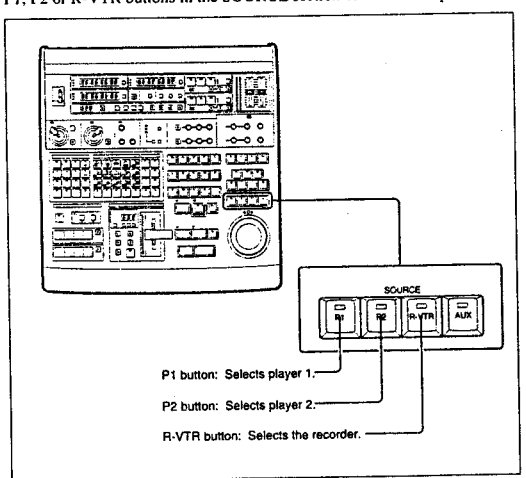
After setting the IN point, avoid running the tape. Editing precision may decline if you run the tape before executing the edit. You should be especially careful about using the search dial to run the tape repeatedly in the forward and reverse directions. Doing so can result in large discrepancies between the counter value and the tape position.

Controlling the VCRs

The following section explains how to use this unit for manual control of two player VCRs and one recorder VCR, connected to the PLAYER 1/2 RS-422/RS-232C/LANC connectors and the RECORDER RS-422/RS-232C connectors on the connector panel.

Selecting a VCR

When setting VCR edit points, or manually controlling VCR tape transport from this unit, select the VCR for each operation by pressing one of the P1, P2 or R-VTR buttons in the SOURCE section of the control panel.



Selecting a VCR

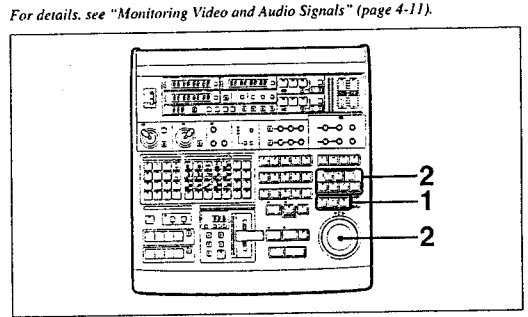
The button lights when you press it, and an asterisk (*) appears beside the selected VCR in the status display of the main monitor screen.

For details, see "About the Status Display" on page 3-13.

Controlling Tape Transport Manually

When controlling tape transport manually from this unit, you can select two or three VCRs for simultaneous operation. This means that if you connect a monitor to each VCR, you can view playback and search for edit points on up to three VCRs simultaneously. Compared to a system with only one monitor, this configuration eliminates the need to switch back and forth between VCRs to view video output.

For details, see "Monitoring Video and Audio Signals" (page 4-11).



Controlling tape transport manually

1 Select a VCR with a button from the SOURCE section (P1, P2, R-VTR).

2 According to the operation, press one of the buttons in the MANUAL CONTROL section (the button lights), or use the search dial.

- **Using the MANUAL CONTROL buttons**

REC button: Press the PLAY button **while holding down this button and the SHIFT button** when you wish to record the signals output from the PGM 1/2 OUTPUT connectors without making any edit settings.
This button works only when the R-VTR button in the SOURCE section is lit, and it affects only the recorder.

SPEED, MK-SPD (= SHIFT + SPEED) and DMC buttons: Use these buttons to control VCRs with dynamic tracking capability in Dynamic Motion Control (DMC) mode.

For more information about Dynamic Motion Control, see "Controlling the Speed of Dynamic Tracking (DT) Playback" (page 4-5) and "Editing Variable-Speed Playback — DMC Editing" (page 6-12).

PLAY button: Press to begin playback.

STB OFF (= SHIFT + PLAY) button: Press to put a paused VCR into standby off mode (in order to protect the tape and heads while you take an appreciable break from editing).

STILL button: Press to put a VCR into still picture playback mode.

EJECT (= SHIFT + STILL) button: Press to eject a cassette.
REW button: Press to rewind a tape.
FF button: Press to fast forward a tape.
STOP (= SHIFT + FF) button: Press to stop a VCR.

- **Using the search dial**
  Use the search dial to search for a scene at convenient playback speeds.

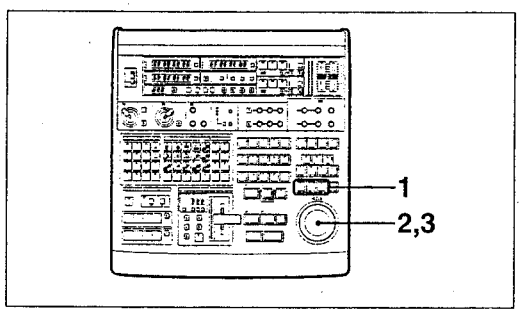
  For details, see "Searching for a Scene With the Search Dial" below.

3 Repeat steps **1** and **2** to control other VCRs. You can control up to three VCRs simultaneously.

Searching for a Scene With the Search Dial

When setting edit points, you can increase your editing efficiency by using the search dial to play back the tape at different speeds.
Each time you press the search dial, it changes from a raised to a depressed position, or the reverse. With the dial in the raised position, you can play back the tape at high speed in the forward or reverse directions (shuttle mode). With the dial in the depressed position, you can play back the tape in frame-by-frame manner in the forward or reverse directions (jog mode).

By combining shuttle and jog modes, you can locate scenes on the tape quickly and efficiently.

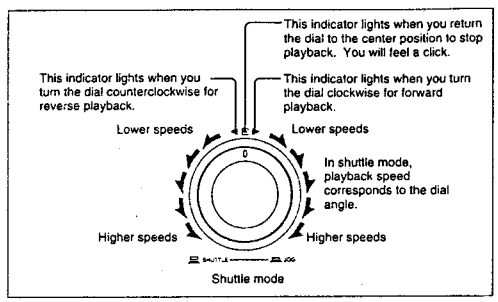


Searching for a scene with the search dial

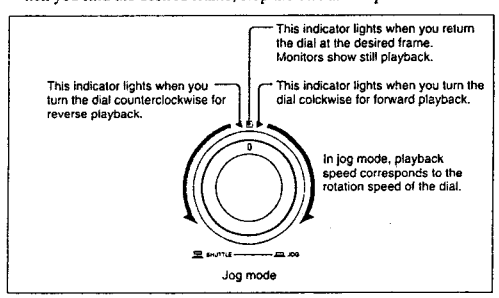
1 Select a VCR with a button from the SOURCE section (P1, P2, R-VTR).

(Continued)

2 With the search dial in the raised position (shuttle mode), turn the dial clockwise or counterclockwise for high-speed playback. When you find the desired scene, return the dial to the center position to stop playback.



3 Press the search dial down to the depressed position (jog mode), and turn the dial clockwise or counterclockwise to play back the tape frame by frame.
When you find the desired frame, stop the dial at that position.

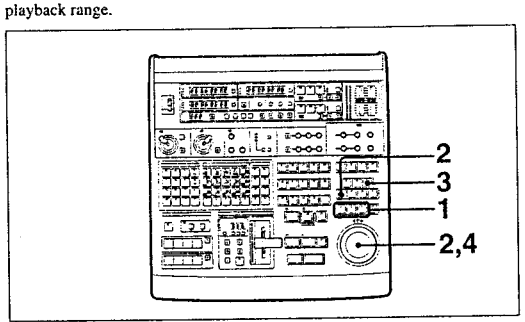


Note

The range of controllable playback speeds may differ in both jog and shuttle modes, depending on the capabilities of the connected VCRs.

Controlling the Speed of Dynamic Tracking (DT) Playback

This unit supports Dynamic Motion Control (DMC). If your player VCRs support Dynamic Tracking (DT) playback, you can use the search dial to control tape speed for noiseless, variable-speed playback within their DT playback range.



Controlling DT playback speed

1 Select a VCR with a button from the SOURCE section (P1, P2, R-VTR).

2 Rotate the search dial or press the PLAY button in the MANUAL CONTROL section to begin playback.

3 Stop the dial at the scene where you wish to begin DT playback, and press the DMC button in the MANUAL CONTROL section, turning it on.

The selected VCR enters DMC mode.

4 Press the search dial to put it into shuttle mode, and rotate it to control the speed of DT playback.

In DMC mode, tape speed varies between –1 to +3 times normal speed, according to the angle of the dial. However, actual speeds may differ slightly, depending on the capabilities of the connected VCRs.

Selecting Video and Audio Signals

This section is a preliminary introduction to the video switching and audio mixing features of this unit. It explains how to select input and output signals, how to adjust them, and how to monitor program signals on the main and program monitors.

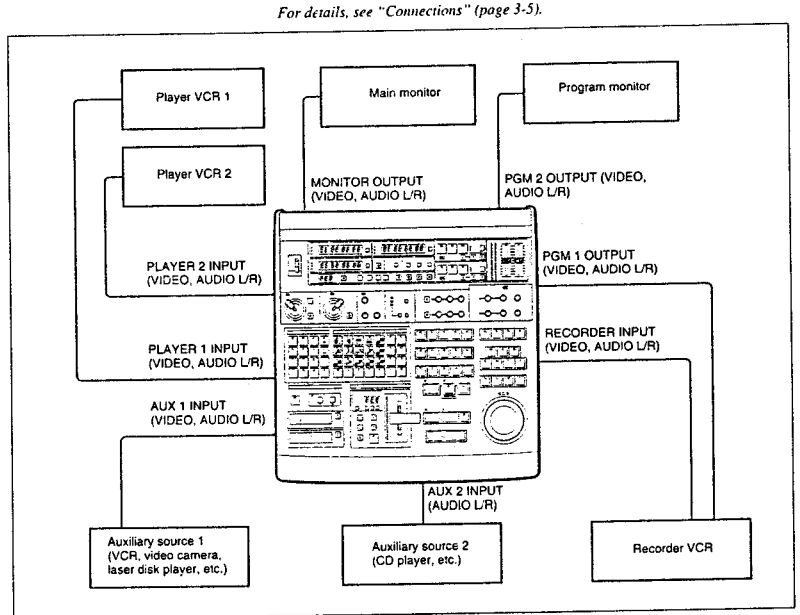
For more information about input and output of audio signals, see "Audio Signal Flow " in the Appendixes (page A-5).

The following explanations assume a system configured as shown below.

Note

Some settings may differ depending on the connected VCRs.

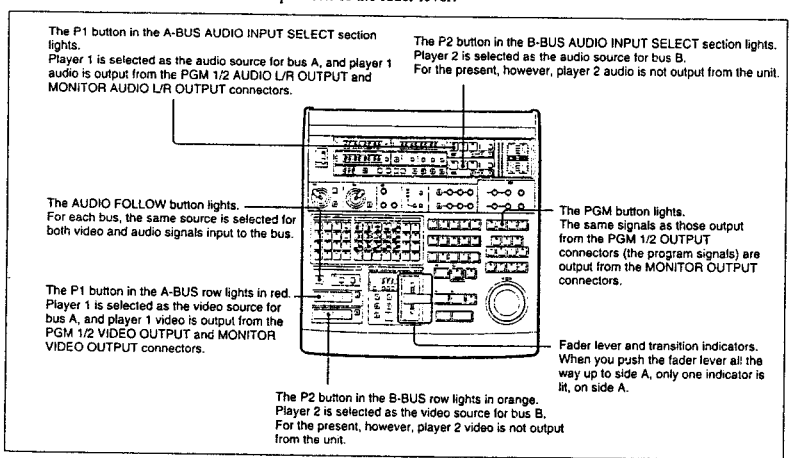
For details, see "Connections" (page 3-5).



Connected equipment and video/audio I/O connectors

Default Input and Output Signals

Turn the unit on, and push the fader lever up all the way toward side A. As soon as you begin playback or shooting with the connected sources, video and audio from player 1 will be output to the recorder, connected to the PGM 1 OUTPUT connector, to the program monitor, connected to the PGM 2 OUTPUT connectors, and to the main monitor, connected to the MONITOR OUTPUT connectors. This is because the unit is automatically initialized as follows when you turn it on, depending on the position of the fader lever.



Default input and output signals

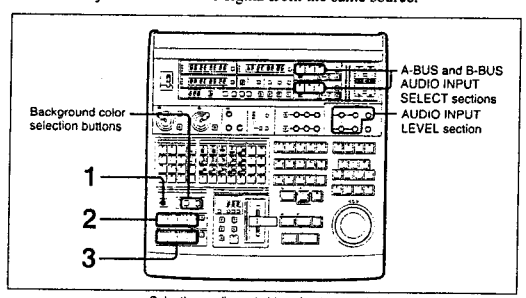
About the colors of input button lights

The meanings of the different colors of the buttons in the A-BUS row and B-BUS row of the VIDEO INPUT SELECT section are as follows.

- When a button **lights in red**, it means that the signal selected with that button is output from the PGM 1/2 OUTPUT connectors.
- When a button **lights in orange**, it means that the signal has been selected for input to the A or B bus, but not for output.
- When two buttons in either the A-BUS row or the B-BUS row **light in red**, it means that the signals selected with those buttons are mixed for output.
- When a button **flashes**, it means that there is no input to the connector selected by that button.
- **About the BKGD buttons**
  The BKGD buttons in the VIDEO INPUT SELECT section select color background output. Note that these buttons take precedence over other buttons in the same row (P1, P2, AUX). Even if the other buttons are lit, the output will be the color background.

Selecting the Same Source for Video and Audio Inputs to a Bus

When the AUDIO FOLLOW button in the VIDEO INPUT SELECT section is lit, an operation which selects a video signal for input to a bus automatically selects the audio signal from the same source.



Selecting audio and video simultaneously

1 If the AUDIO FOLLOW button is not lit, press it turning it on.

2 To select the input signals for bus A, press the desired button in the A-BUS row of the VIDEO INPUT SELECT section so that it lights in red or orange.

For the meaning of the red and orange colors, see "About the colors of input button lights" on the previous page.

P1 button: Selects player 1 audio and video.
The P1 button in the A-BUS AUDIO INPUT SELECT section lights automatically.
P2 button: Selects player 2 audio and video.
The P2 button in the A-BUS AUDIO INPUT SELECT section lights automatically.
AUX button: Selects auxiliary source 1 audio and video.
The AUX 1 button in the A-BUS AUDIO INPUT SELECT section lights automatically.
BKGD button: Selects a background color generated by the built-in color background generator.
You can select one of 25 colors by pressing the background color selection buttons (▲/▼).

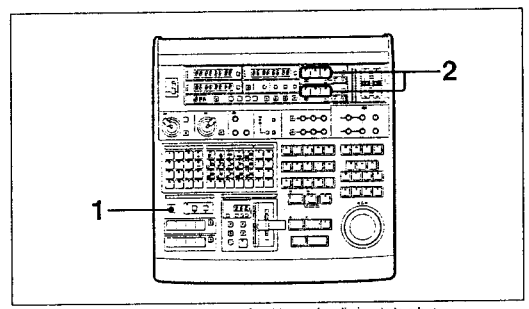
When you press the BKGD button, any other buttons which may have been lit in the A-BUS row of the VIDEO INPUT SELECT section remain lit. However, the selection made with the BKGD button is given priority. Note that the audio signals of the currently selected source are always output, and may be adjusted with the controls in the AUDIO INPUT LEVEL section.

For more information about adjusting the audio level, see "Adjusting Audio Levels" (page 4-17).

3 Proceed in the same way to make selections for bus B, pressing the desired button in the B-BUS row of the VIDEO INPUT SELECT section.

Selecting Different Sources for Video and Audio Inputs to a Bus

You can select video and audio signals from different sources for input to each bus.



Selecting different sources for video and audio inputs to a bus

1 If the AUDIO FOLLOW button in the VIDEO INPUT SELECT section is lit, press it turning it off.

2 Press the desired buttons in the A-BUS and B-BUS AUDIO INPUT SELECT sections, turning them on.

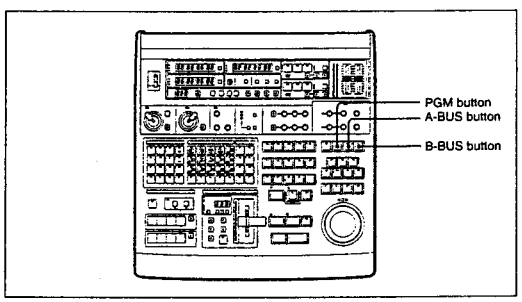
P1 button: Selects audio input from player 1.
P2 button: Selects audio input from player 2.
AUX 1 button: Selects audio input from auxiliary source 1.

Monitoring Video and Audio Signals

You can monitor signals from bus A or bus B on both the program monitor, connected to the PGM 2 OUTPUT connectors, and the main monitor, connected to the MONITOR OUTPUT connectors.
In addition to signals from bus A and bus B, you can monitor signals from any connected source on the main monitor.

Monitoring bus signals on the main monitor

To output signals from bus A to the main monitor, press the A-BUS button in the MONITOR section, turning it on. To output signals from bus B, press the B-BUS button.
If you press the PGM button in the MONITOR section, you can output the signals currently being output from the PGM 1/2 OUTPUT connectors to the main monitor.



Monitoring bus signals on the main monitor

Monitoring bus signals on the program monitor

When viewing output signals on the program monitor, you can switch from A-bus signals to B-bus signals, or the reverse.

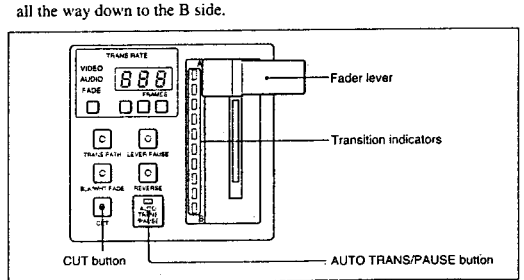
Example: Switching from A-bus signals to B-bus signals

- Press the CUT button in the EFFECT TRANSITION section.
  The output from the PGM 1/2 OUTPUT connectors switches instantly from A-bus signals to B-bus signals.
  The single transition indicator which had been lit on the A side goes out, and a single transition indicator lights on the B side.
  When the CUT button is pressed, the AUTO TRANS/PAUSE button lights automatically, and the unit enters auto transition mode.

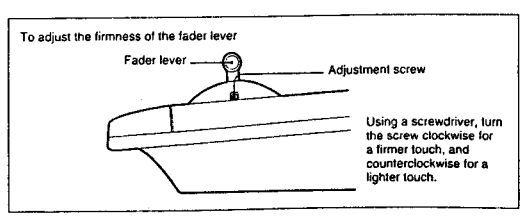
For details about auto transition mode, see "Auto Transition Effects" (page 6-5).

Or

- Pull the fader lever down from the A side to the B side.
  If the NORMAL MIX button in the MIX/EFFECT section is lit, then signals from bus A are mixed with signals from bus B during the time that the fader lever is being pulled from side A to side B. When the fader lever is pulled all the way down to side B, signals are output from bus B only.
  As the transition progresses, the number of lit transition indicators increases, and then decreases to only one when the fader lever is pulled all the way down to the B side.



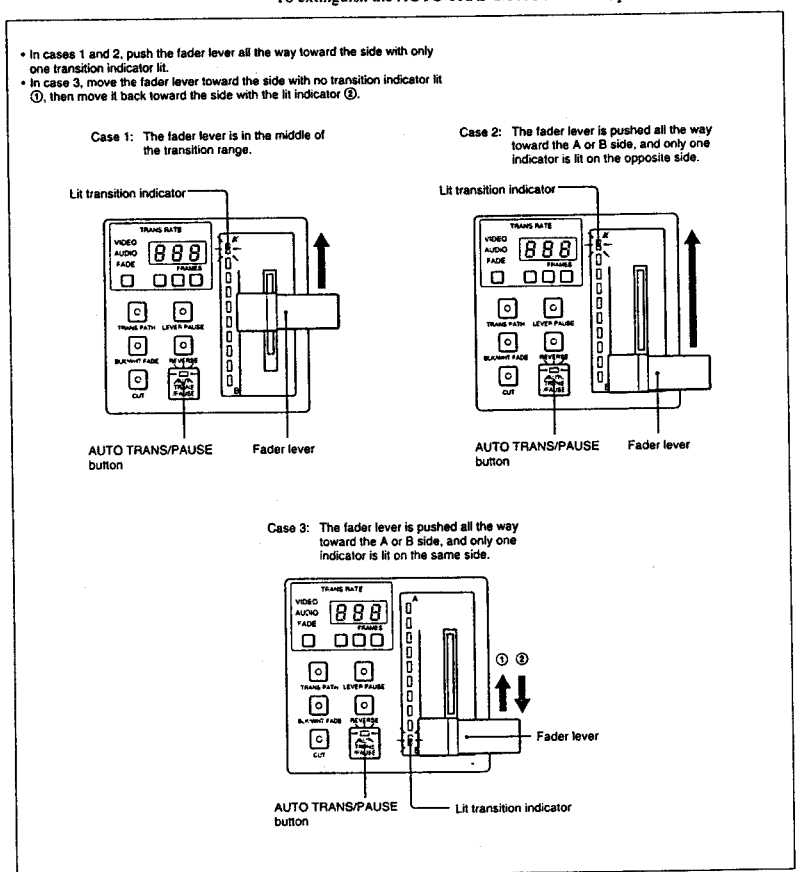
Switching output to the program monitor



Note on the fader lever

When the AUTO TRANS/PAUSE button is lit, the fader lever is disabled. To use the fader lever, you must extinguish the AUTO TRANS/PAUSE button.

To extinguish the AUTO TRANS/PAUSE button, proceed as follows:



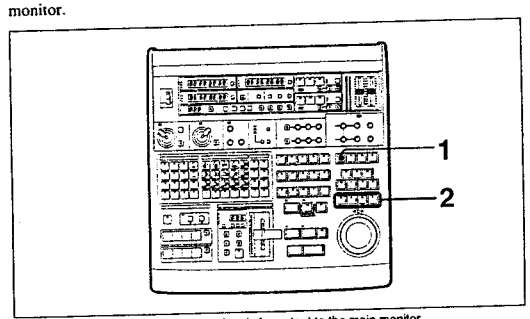
To extinguish the AUTO TRANS/PAUSE button

Selecting Video and Audio Signals

Monitoring source signals directly

You can output source signals directly to the main monitor without passing through the A bus or the B bus.

Proceed as follows to select source signals for direct output to the main monitor.



Switching source signals for output to the main monitor

1 Press the SOURCE button in the MONITOR section, turning it on.

The PGM button goes out. The video and audio signals which are currently selected by SOURCE section buttons are output to the main monitor.

2 To monitor another source, press the desired SOURCE section button, turning it on.

P1 button: To monitor audio and video input from player 1.
P2 button: To monitor audio and video input from player 2.
R-VTR button: To monitor audio and video input from the recorder.
AUX button: To monitor audio and video input from auxiliary source 1.

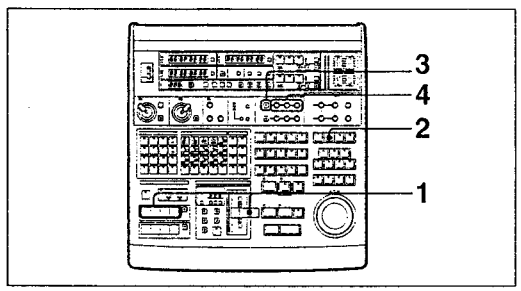
The SOURCE section button which had been lit up to now goes out, and signals from the newly selected source are output to the main monitor.

Adjusting Video and Audio Signals

By adjusting the color characteristics of input video, and adjusting the audio input level, you can output signals to match the effects you desire from the PGM 1/2 OUTPUT connectors.

Adjusting Video Signals

While viewing the monitor, you can adjust the hue (FXE-120) or color subcarrier phase (FXE-120P), luminance, and chrominance of the video output.
The following example shows how to adjust A-bus video output signals while viewing the monitor.



Adjusting video signals

1 Push the fader lever up to the A side, and select the signals you want to adjust with the selection buttons in the A-BUS row of the VIDEO INPUT SELECT section.

2 Press the PGM button in the MONITOR section.

The signals selected in step **1** are output to the main monitor.

3 Press the A-BUS button in the VIDEO LEVEL & HUE (FXE-120) or VIDEO LEVEL & CHROMA PHASE (FXE-120P) section.

The HUE (FXE-120) or CHROMA PHASE (FXE-120P), LUMINANCE and CHROMINANCE knobs to the right of the button are enabled.

(Continued)

4 While viewing the main monitor, rotate the knobs to adjust the video.

HUE knob (FXE-120): Adjusts the hue.
CHROMA PHASE knob (FXE-120P): Adjusts the color subcarrier phase.
LUMINANCE knob: Adjusts the brightness.
CHROMINANCE knob: Adjusts the saturation.

Note for FXE-120P
When adjusting the color subcarrier phase, use a vectorscope to measure the adjustments.

If you want to adjust the white balance, use the COLOR CORRECTION joystick.

For details, see "Color correction" (page 5-54).

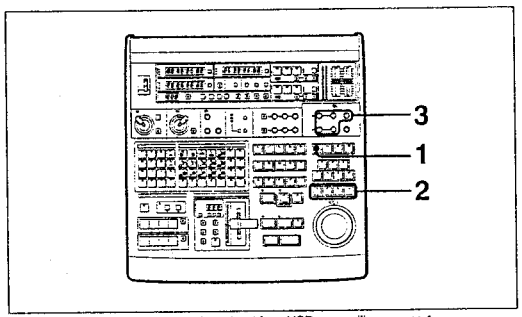
Chapter 4

Adjusting Audio Levels

This section explains how to adjust audio input and output levels.

Adjusting the audio input level

To adjust the audio input level from VCRs or auxiliary source 1
Proceed as follows.



Adjusting the audio input level from VCRs or auxiliary source 1

1 Press the SOURCE button in the MONITOR section, turning it on.

2 Select the audio source by pressing one of the buttons (P1, P2, AUX) in the SOURCE section.

P1 button: Player 1
P2 button: Player 2
AUX button: Auxiliary source 1

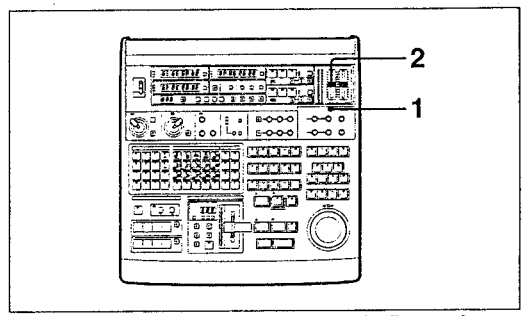
3 Adjust using the knobs in the AUDIO INPUT LEVEL section, while monitoring the audio level meters in the audio mixer section.

P1 MAIN, P2 MAIN knobs: Player 1 and player 2 main audio level.
P1 SUB, P2 SUB knobs: Player 1 and player 2 secondary audio level.
AUX 1 knob: Auxiliary source 1 audio level.

Note
The left (L) and right (R) channels are adjusted together. They cannot be adjusted separately.

To adjust audio input from microphones and auxiliary source 2
Regardless of the position of the fader lever (and the number of lit transition indicators), you can mix narration and background music from a microphone or auxiliary source at the desired level with the audio of bus A or bus B, for output from the PGM 1/2 AUDIO L/R OUTPUT connectors.

To adjust the level of audio input from the microphone or auxiliary source 2, proceed as follows.



Adjusting the level of audio input from microphones and auxiliary source 2

1 Using the AUX 2/MIC switch in the audio mixer section, select the audio signal which you wish to adjust.

AUX 2: Adjust the level of audio input from auxiliary source 2.
MIC: Adjust the level of audio input from the microphone.

2 Move the AUX 2/MIC fader to adjust the audio input level.

The further up the fader is, the higher the audio level.

Notes
- The left (L) and right (R) auxiliary source levels are adjusted together. They cannot be adjusted separately.
- Microphone input is monaural.

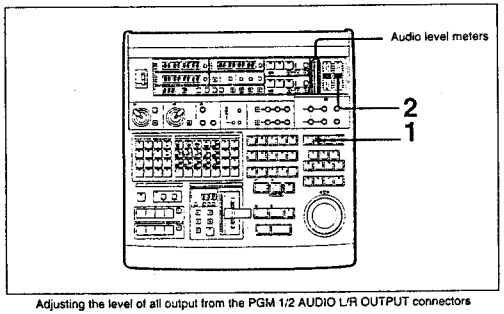
For more information about the flow of audio signals see page A-5.

Chapter 4

Adjusting audio output levels

To adjust the level of all output from the PGM 1/2 AUDIO L/R OUTPUT connectors

Proceed as follows.



Adjusting the level of all output from the PGM 1/2 AUDIO L/R OUTPUT connectors

1 Press the PGM button in the MONITOR section, lighting it, to select program signals for output to the main monitor.

2 While monitoring the level meters in the audio mixer section, move the MASTER fader to adjust the level.

The further up the fader is, the higher the audio level.

Note

The left (L) and right (R) channels are adjusted together. They cannot be adjusted separately.

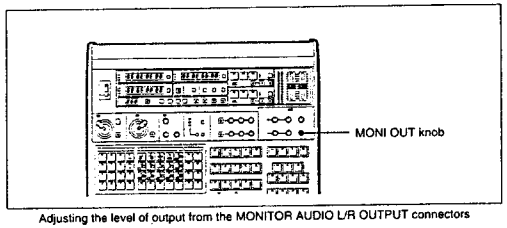
For more information about the flow of audio signals see page A-5.

To adjust the level of output from the MONITOR AUDIO L/R OUTPUT connectors

Rotate the MONI OUT knob in the AUDIO INPUT LEVEL section clockwise to increase the level, and counterclockwise to decrease it.

Note

The left (L) and right (R) channels are adjusted together. They cannot be adjusted separately.



Adjusting the level of output from the MONITOR AUDIO L/R OUTPUT connectors

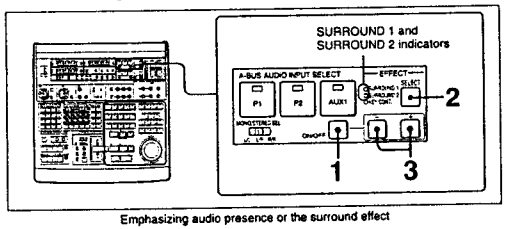
For more information about the flow of audio signals see page A-5.

Applying special effects to audio input

You can enhance audio presence by raising the sound pressure of the central area of the sound field created by the left and right audio input signals. You can also obtain a spacious surround effect by raising the sound pressure of the left and right peripheral areas of the sound field, and adjust the key level of audio input.

To emphasize audio presence or obtain a surround effect

For example, proceed as follows to emphasize the presence or surround effect of audio signals on bus A.



Emphasizing audio presence or the surround effect

1 Press the SELECT button in the A-BUS AUDIO EFFECT section so that the SURROUND 1 or SURROUND 2 indicator lights.

To emphasize audio presence (surround-1 effect): Press the SELECT button so that the SURROUND 1 indicator lights.
To emphasize the surround effect (surround-2 effect): Press the SELECT button so that the SURROUND 2 indicator lights.

2 Press the ON/OFF button, turning it on.

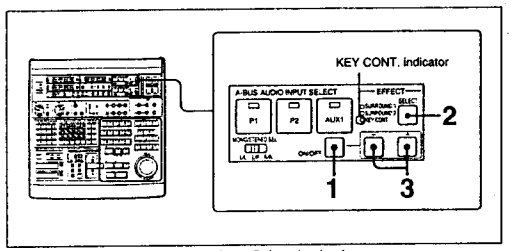
The effect selected in step **1** is applied to the audio signals on bus A.

3 Press the '+' button or '–' button to adjust the effect level.

To raise the effect level: Press the '+' button. Each press of the button raises the effect level by one step. To raise the level continuously, keep the button pressed. The button flashes when the maximum level is reached.
To lower the effect level: Press the '–' button. Each press of the button lowers the effect level by one step. To lower the level continuously, keep the button pressed. The button flashes when the minimum level is reached.

To adjust the key level of audio input

For example, proceed as follows to adjust the key level of audio signals on bus A.



Adjusting the audio input key level

1 Press the SELECT button in the A-BUS AUDIO EFFECT section, so that the KEY CONT. indicator lights.

2 Press the ON/OFF button, turning it on.

The key control effect is applied to the audio signals on bus A.

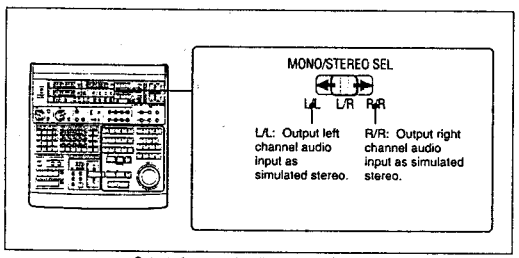
3 Press the '+' button or '–' button to adjust the key level.

To raise the key level: Press the '+' button. Each press of the button raises the key level by one step. To raise the level continuously, keep the button pressed. The button flashes when the maximum level is reached.
To lower the key level: Press the '–' button. Each press of the button lowers the key level by one step. To lower the level continuously, keep the button pressed. The button flashes when the minimum level is reached.

To output monaural audio input as simulated stereo

You can obtain a simulated stereo effect for monaural audio input by distributing the monaural signal to left and right output channels. This allows you to obtain a stereo effect even with tapes that contain timecode or other information on one of the audio tracks.

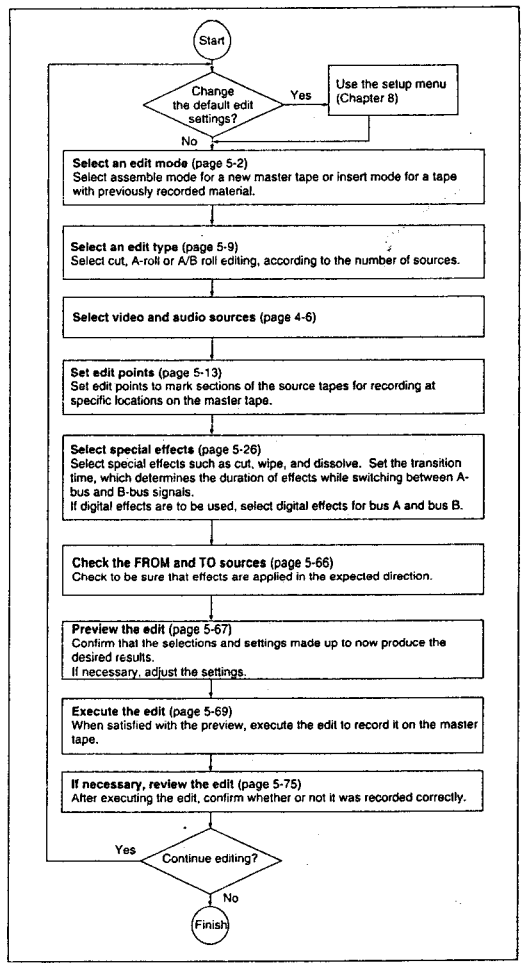
For example, to output simulated stereo using monaural audio input signals on bus A, set the A-BUS AUDIO MONO/STEREO SEL switch to "L/L" or "R/R".



Output of monaural audio as simulated stereo

Common Editing Procedures

The following is a flowchart of basic operations which are common to every editing session. See the page numbers in parentheses for detailed descriptions of each operation.



Flowchart of a typical editing session

Selecting an Edit Mode

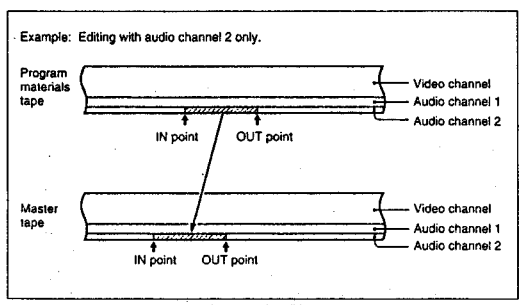
This section describes the unit's edit modes and explains when to select them.

Note

For some VCRs, it may not be possible to select edit modes when tapes are write inhibited.

Insert Mode

Select insert mode when you want to insert program material at specific points on a previously recorded tape. You can insert video and audio simultaneously, video only, or audio only. Furthermore, you can add or cancel channel selections during execution of an edit. You can also specify channel 1 audio, channel 2 audio, or both.
Unlike assemble mode editing, insert mode editing does not affect sections of the tape beyond the recorder OUT point, because the unit switches from recording mode to playback mode as soon as the OUT point is reached.
Insert mode is selected by default when you turn the unit on. However, note that in some cases the video channel only is selected, due to limitations in the connected VCRs.



Insert mode editing

Select insert mode when you wish to:
- record video and audio over unneeded sections of a previously recorded tape.
- insert music and narration into a tape containing an edited video program.
- insert video into a tape containing an edited audio program.

Note

Tapes with nothing at all recorded on them cannot be used as master tapes in insert mode editing. Normally, master tapes should be prepared by recording black burst signals in advance.

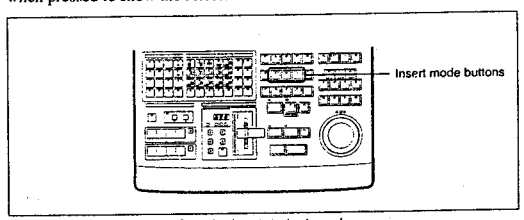
For details, refer to the FXE-120/120P Handbook supplied with this unit.

Selecting insert mode

In the EDIT MODE section of the control panel, press the insert mode button(s) (V, A1, A2) corresponding to the channel(s) that you wish to edit. You can perform this operation during execution of an insert edit to add more channels.

V button: Edit the video channel.
A1 button: Edit audio channel 1.
A2 button: Edit audio channel 2.

You can press several buttons to edit multiple channels. The buttons light when pressed to show the selected channels.



Selecting insert mode channels

To cancel a channel selection

Press the corresponding insert mode button so that it goes out. You can perform this operation during execution of an insert edit.

To exit insert mode

Press all of the lit insert mode buttons.
When you press the last lit button, instead of going off it begins to flash, along with the other two insert mode buttons. The ASMBL button also begins to flash. This means that no edit mode is currently selected.

Changing the edit channels during insert mode edit execution

You can add or cancel an edit channel selection during execution of most insert mode edits. However, edit channel selections cannot be changed during execution of sync roll edits and edits of 8 mm video carried out via the RS-232C interface.

To add a channel to the edit during edit execution

Press the insert mode button (V, A1, A2) corresponding to the channel that you wish to add, turning the button on.

To cancel an edit channel selection during edit execution

Press the insert mode button (V, A1, A2) corresponding to the channel that you wish to cancel, turning the button off.

To toggle the selection status of all three edit channels (V, A1, and A2) simultaneously

You can press the V button while pressing the SHIFT button to cancel the currently selected channels and select the unselected channels.

For example:

- If the V and A2 buttons are lit and the A1 button is not lit, you can press the V button while pressing the SHIFT button to cancel the selection of the video and audio 2 channels and simultaneously select the audio 1 channel.
- If all of the edit channels are selected, you can press the V button while pressing the SHIFT button to cancel the selection of all 3 channels.
- If none of the edit channels are selected, you can press the V button while pressing the SHIFT button to select all 3 channels.

To toggle the selection status of the 2 audio channels (A1 and A2) simultaneously

You can press the A1 button while pressing the SHIFT button to cancel the currently selected audio channel and simultaneously select the other, unselected channel.

For example:

- If only the A1 button is lit, you can press the A1 button while pressing the SHIFT button to cancel the selection of the audio 1 channel and simultaneously select the audio 2 channel.
- If both of the audio channels are selected, you can press the A1 button while pressing the SHIFT button to cancel the selection of both channels.
- If neither of the edit channels is selected, you can press the A1 button while pressing the SHIFT button to select both channels.

Time code insert mode

Use this mode to add time code to tapes with previously recorded audio or video.

For details, see "Recording Time Code — Time Code Insert" (page 6-21).

Split mode

You can set independent IN points for audio and video.

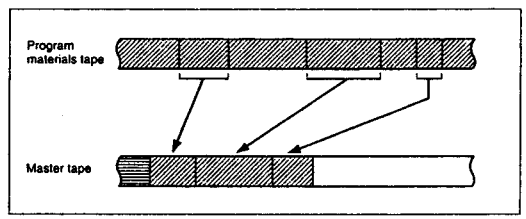
For details, see "Setting Independent Video and Audio IN Points — Split Editing" (page 6-7).

Assemble Mode and First Edit Mode

Assemble mode

Select assemble mode when you want to record sequentially from the start of a master tape. Video and audio are recorded on the master tape together with control and time code signals. If time code signals have already been recorded on the master tape, then the newly recorded time code signals will be recorded in sequence with the existing signals.

Assemble mode is convenient when using a new tape as the master tape.



Assemble mode editing

Notes on assemble mode editing

- When an assemble edit is executed for the first time on a master tape, the unit expects to find CTL signals recorded on the tape from the preroll point or earlier up to and including the IN point. If CTL signals have not yet been recorded on the tape, execute a first edit before selecting assemble mode.

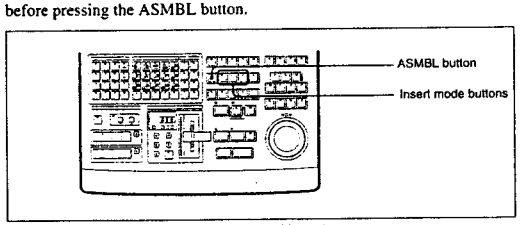
For details, see "First edit mode" on the next page.

- If you begin an assemble edit at a point midway though an already recorded tape, signals will be erased across the entire width of the tape for about two seconds after the recorder's OUT point. Both video and audio signals recorded in this two-second section will be lost. If you wish to avoid this, select insert mode instead of assemble mode.

Selecting an Edit Mode

Selecting assemble mode

Press the ASMBL button in the EDIT MODE section of the control panel, turning it on.
If any insert mode buttons (V, A1, A2) are lit, press them to turn them off before pressing the ASMBL button.



Selecting assemble mode

To exit assemble mode
Press the ASMBL button, turning it off, or press one of the insert mode buttons (V, A1, A2), turning it on.

First edit mode

If there is nothing at all recorded on the master tape, you will be unable to execute even an assemble edit. This is because the unit needs to find control signals on the master tape, at least around the edit IN point, in order to synchronize the tapes.
When using a blank tape for the first time, select first edit mode to perform an initializing assemble edit. Black burst signals, CTL signals, and time codes will be recorded from the beginning of the tape, as follows.

- **Before the IN point:** 10 seconds, plus the preroll time selected under setup menu item 105 RS232C PREROLL TIME or item 106 RS422 PREROLL TIME.

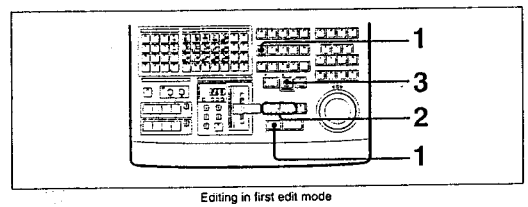
For details, see Chapter 8.

- **After the IN point:** 2 seconds

After executing a first edit, the unit automatically enters assemble mode.

Executing a first edit

Proceed as follows to execute a first edit.



Editing in first edit mode

1 In the EDIT MODE section, press the 1ST EDIT (=SHIFT+ASMBL) button after verifying that:
- the ASMBL button is lit, or
- the ASMBL button and insert mode buttons (V, A1, A2) are flashing.

If any insert mode buttons are lit, press to turn them off, until they begin flashing together with the ASMBL button.
When you press the 1ST EDIT (=SHIFT + ASMBL) button, it begins flashing more rapidly than normal.

2 Set the edit points for the first assemble edit.

For more information about setting edit points, see page 5-13.

3 Press the AUTO EDIT/END button in the AUTO CONTROL section. The recorder begins to run. Black burst signals, CTL signals, and time code signals are recorded from the beginning of the tape to a point sufficient for synchronization, and then the first assemble edit is executed.

To set an IN point time code other than 00:00:00:00
After step **1**, press the MARK IN button in the TIME MARK section, or press the SET IN (=SHIFT + MARK IN) button and enter the desired time code with the numeric keypad.

For details, see "Setting edit points with the numeric keypad" (page 5-15).

About time code and control signals

Under setup menu item 103 EDIT REFERENCE, you can specify whether time code or CTL signals shall be used as tape positioning information. The unit is factory preset to use longitudinal time code (LTC, time code recorded along the length of the tape).

Notes

- With the FXE-120, time code is recorded in non-drop frame mode when setup menu item 110 FRAME CONTROL MODE is set to AUTO. Note that this menu item is not incorporated in the FXE-120P.
- The data selected under setup menu item 117 USER BITS is recorded in time code user bits.

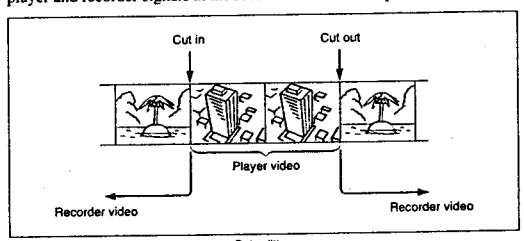
For details, see Chapter 8.

Selecting an Edit Type

Depending upon whether you are using one or two players, select the type of insert or assemble edit.

Cut Editing

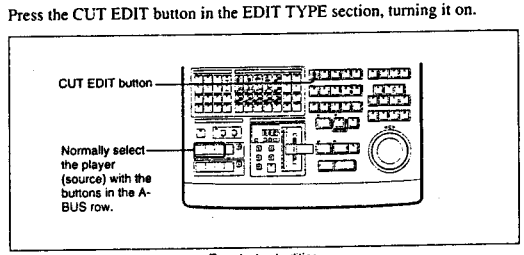
Cut editing is editing with one player, with instantaneous cuts between player and recorder signals at the recorder IN and OUT points.



Cut editing

To select cut editing

Press the CUT EDIT button in the EDIT TYPE section, turning it on.



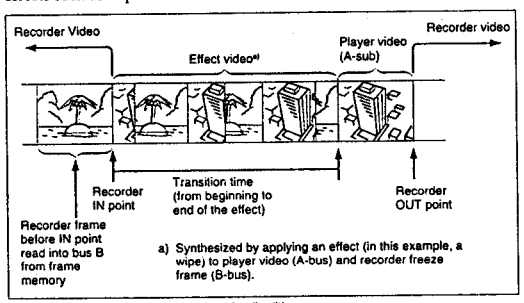
To select cut editing

Note

In normal cut editing, select sources by pressing the buttons in the A-BUS row of the VIDEO INPUT SELECT section and pushing the fader lever all the way to the A-bus side. If the fader lever is positioned between the A-bus and B-bus sides, combined A-bus and B-bus video will be recorded as the player video.

A-Roll Editing

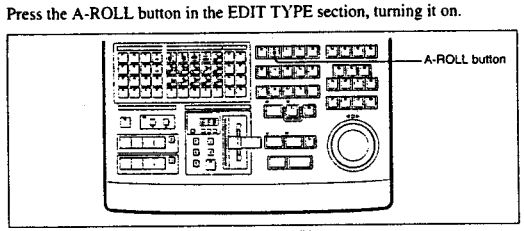
A-roll editing is like cut editing in that it uses only one player. In A-roll editing, however, the playback frame before the recorder IN point is read into bus B, making it possible to use the two signals (A-bus and B-bus) in effects such as wipes and dissolves.



A-roll editing

To select A-roll editing

Press the A-ROLL button in the EDIT TYPE section, turning it on.



To select A-roll editing

To capture freeze playback from video with rapid motion, select single-field freeze by pressing the B-BUS and FRAME/FIELD buttons in the INPUT EFFECT section, turning them on.

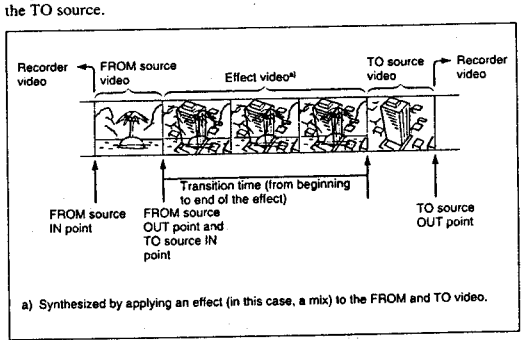
Note

The following restrictions apply in A-roll editing.

- In order to read signals from the recorder into bus B, the player source must always be selected by pressing a button in the A-BUS row of the VIDEO INPUT SELECT section.
- If the BKGD button in the B-BUS row is lit, video signals from the recorder cannot be read into bus B, meaning that the effect will use video signals from bus A and a background color from bus B. If the BKGD button is lit, press it to turn it off.

A/B Roll Editing

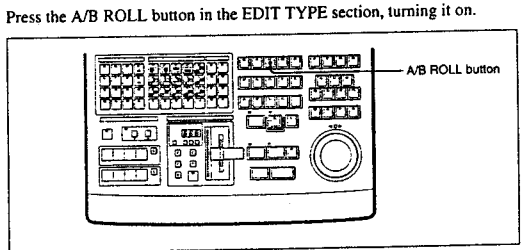
A/B roll editing allows you to record while applying effects such as wipes and dissolves to the playback of two players. The player supplying the signals which appear before the transition is called the FROM source, and the player supplying the signals which appear after the transition is called the TO source.



A/B roll editing

To select A/B roll editing

Press the A/B ROLL button in the EDIT TYPE section, turning it on.



To select A/B roll editing

Note

This unit also allows a single player to be used to switch from A-bus signals to B-bus signals. In this case too, A/B roll edit should be selected as the edit type by pressing the A/B ROLL button.

For details, refer to "Applying Digital Effects While Switching Between Two Scenes With One Player — Self A-Roll Editing" (page 26) in the FXE-120/120P Handbook.

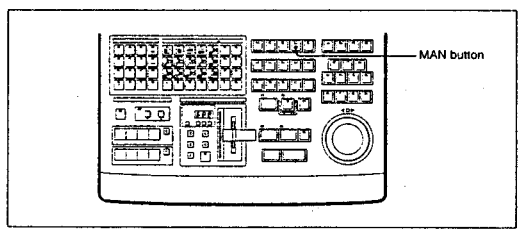
Manual Effects and Sync Roll Editing

Editing with manual effects

While running two players, you can operate the controls for manual effects at the desired scene. The effects are recorded on tape but not registered in the edit decision list (EDL).

For more information about the EDL, see Chapter 7.

To select manual effect editing
Press the MAN button in the EDIT TYPE section, turning it on.



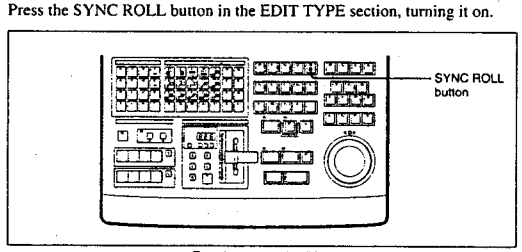
To select manual effect editing

For more information about manual effects, see "Editing With Manual Special Effects" (page 6-3).

Sync roll editing

Sync roll editing is similar to manual editing, except that the effects are registered in the edit decision list. While running two players, operate the controls to achieve the desired effect at the desired scene.

To select sync roll editing
Press the SYNC ROLL button in the EDIT TYPE section, turning it on.



To select sync roll editing

For more information about sync roll editing, see page 6-1.

Setting Edit Points

This section explains how to set and modify edit points.

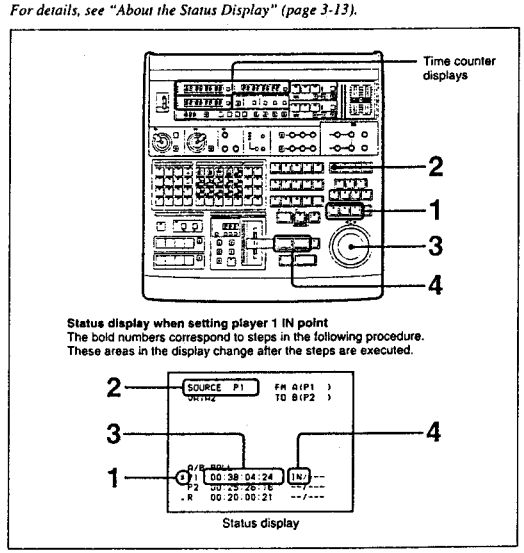
Setting Edit Points

There are two ways to set an edit point:
- Search for the desired frame while viewing playback on the monitor, and then operate the controls to store the time code for that frame in the unit's memory.
- Enter the edit point data manually using the numeric keypad.

Setting edit points while viewing playback

Proceed as follows to set edit points while viewing playback on the main monitor. If the ON indicator in the SCREEN section is lit, a status display on the main monitor will be updated as you carry out each step.

For details, see "About the Status Display" (page 3-13).



Setting edit points while viewing playback

1 Select a VCR by pressing a button in the SOURCE section.
P1 button: Player 1
P2 button: Player 2
R-VTR button: Recorder

- The source button lights. The IN and OUT indicators next to the time counter display for that VCR begin to flash.
- If you have already set an IN point, the IN indicator will be lit. If you have already set an OUT point, the OUT indicator will be lit. In this case, you can update the edit points by executing steps **2**, **3** and **4**.

Status display
Shows an asterisk (*) in front of the selected VCR.

2 Press the SOURCE button in the MONITOR section.
The button lights, and playback from the VCR selected in step **1** appears on the main monitor. You can skip this step if you have connected a monitor for each VCR.

Status display
Shows "SOURCE" in the monitor signal area, followed by the name of the selected VCR.

3 While viewing the main monitor, rotate the search dial until you find the desired frame, then stop the dial.
Time code data recorded on the tape for that frame appears in the time counter display.

For details, see "Searching for a Scene With the Search Dial" (page 4-3).

Status display
Shows the selected VCR's current tape position in the time code area.

4 Press the MARK IN or MARK OUT button in the TIME MARK section.
MARK IN: The time code in the time counter display is set as the IN point. The IN indicator stops flashing and lights.
MARK OUT: The time code in the time counter display is set as the OUT point. The OUT indicator stops flashing and lights.

Example: If you press the MARK IN button when player 1 is the selected VCR

(Continued)

Status display
Shows "IN/– – –" in the time code area.

Note
If the VCRs are not connected correctly, or if the unit was unable to read time code information, an error code will appear in the time counter display.

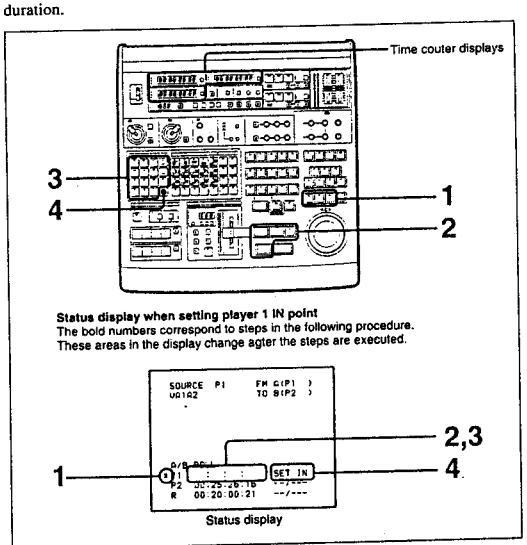
For details, see "Error Messages" in the Appendixes (page A-1).

5 Repeat steps **1** through step **4** to set the remaining edit points for each VCR.

To restore the original edit points after modifying them
Press the LAST X (=SHIFT + DUR) button in the AUTO CONTROL section.

Setting edit points with the numeric keypad

If you already know the time codes for the frames you want to set, you can enter the codes manually using the numeric keypad. Enter two out of the following three: time codes for the IN and OUT edit points, and the duration.



Status display when setting player 1 IN point
The bold numbers correspond to steps in the following procedure.
These areas in the display change agter the steps are executed.

Setting edit points with the numeric keypad

1 Select a VCR by pressing a button (P1, P2 or R-VTR) in the SOURCE section.

- The source button lights. The IN and OUT indicators next to the time counter display for that VCR begin to flash.
- If you have already set an IN point, the IN indicator will be lit. If you have already set an OUT point, the OUT indicator will be lit. In this case, you can update the edit points by executing steps **2**, **3** and **4**.

Status display
Shows an asterisk (*) in front of the selected VCR.

2 In the TIME MARK section, press the SET IN (=SHIFT + MARK IN) button, the SET OUT (=SHIFT + MARK OUT) button, or the SET DUR button. The unit enters numeric keypad mode and all of the numeric keys light.

SET IN (=SHIFT + MARK IN): Press this button to set an IN point. The SET IN indicator lights.
SET OUT (=SHIFT + MARK OUT): Press this button to set an OUT point. The SET OUT indicator lights.
SET DUR: Press this button to set the duration. The SET DUR button lights.

Status display
Shows " : : : " in the time code area for the selected VCR, and "SET IN", "SET OUT" or "SET DUR" in the time code data type area.

3 Using the numeric keypad, enter the time code of an IN or OUT point, or the duration (up to eight digits).

Note
The most significant digits are automatically initialized to '0', so you don't need to enter all eight digits. For example, to enter the data "00 hours, 00 minutes, 35 seconds, 24 frames" you can skip the 0000 representing hours and minutes and enter only 3524.

Status display
The number is displayed as you enter it in the selected VCR's time code area.

(Continued)

4 Press the ENT key in the numeric keypad section.
The IN point, OUT point or duration data entered in step **3** is confirmed. For an IN point, the IN indicator next to the time counter lights. For an OUT point, the OUT indicator lights. For a duration, both the IN and OUT indicators light.
As soon as you press the ENT key, the unit leaves numeric keypad mode.

Status display
The time code data type area changes as follows.
- "SET IN" → "IN/– – –".
- "SET OUT" → "OUT/– – –".
- "SET DUR" → "IN/OUT" (if an IN or OUT point has been set)
  → "– –/– – –" (if no IN or OUT point has been set)

5 Repeat steps **1** through step **4** to set the remaining edit points for each VCR.

To specify a duration for auxiliary source 1
In step **1**, press the AUX button in the SOURCE section, and in step **2** press the SET DUR button.

Notes
- When you press the AUX button, "R-VTR" in the bottom line of the status display changes to "AUX".
- IN points are set automatically for auxiliary source 1.
- The SET IN (=SHIFT + MARK IN) and SET OUT (=SHIFT + MARK OUT) buttons have no effect for auxiliary source 1.

Using special keys in the numeric keypad
00 key: Allows you to enter two zeros at once.
BS key: Erases the digit currently displayed in the last column of the time counter display.
CLR key: Erases all of the digits displayed in the time counter display.

To exit numeric keypad mode immediately
Press the CLEAR button in the AUTO CONTROL section.

To restore the original data
Press the LAST X (=SHIFT + DUR) button in the AUTO CONTROL section.

Chapter 5

Relation Between IN/OUT Points and Duration

As soon as you enter two out of the three values (IN point, OUT point, and duration), the unit automatically calculates the third.
When you change one of the values, the other two are adjusted according to the following precedence table. Items with higher numbers have lower precedence, and are the first to be adjusted.

1. Manually set IN point
2. Manually set OUT point
3. Manually or automatically set duration
4. Automatically set IN point
5. Automatically set OUT point

For example, when IN and OUT points have been set manually, and the duration is incremented by three frames using the SET DUR button and the numeric keypad, the OUT point is automatically incremented by three frames while the IN point remains unchanged.

IN point	00:01:02:03 (manual)	Duration increased by three frames →	00:01:02:03 (no change)
OUT point	00:01:04:03 (manual)		00:01:04:06 (automatic)
Duration	00:00:02:00 (automatic)		00:00:02:03 (manual)

The IN point remains unchanged, but the OUT point is automatically incremented by three frames.

Note

A period (.) appears after "IN", "OUT" or "DUR" in the status display to indicate that edit time data has been calculated automatically. This can be verified at any time by selecting a VCR and pressing the IN, OUT or DUR button to display the time data.

Relation between IN/OUT points and duration in DMC editing

When the tape runs at normal speed, the duration is equal to the OUT point value minus the IN point value. In DMC editing, however, this relation is not valid any more unless the initial DMC speed (the DT playback speed at the IN point) is set to +1 times normal speed.

Example 1:	If a duration of 2 seconds is set manually when the initial DMC speed is +1/2 (+50%) of normal speed.	
IN point	00:01:02:03	Set manually
OUT point	00:01:03:03	Calculated value = IN point + 2 seconds × 1/2 times normal speed
Duration	00:00:02:00	Set manually

Example 2:	If an OUT point is set manually at a point 2 seconds beyond the IN point when the initial DMC speed is +1/2 (+50%) of normal speed.	
IN point	00:01:02:03	Set manually
OUT point	00:01:04:03	Set manually
Duration	00:00:04:00	Calculated value = 2 seconds × 1/2 times normal speed

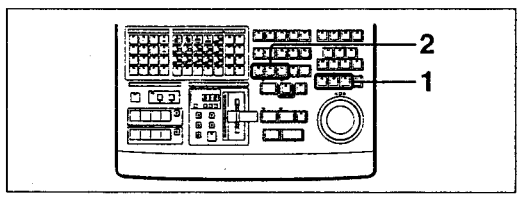
Checking, Cuing Up, Changing and Deleting Edit Points

This section explains how to check edit points, and how to change them after a preview.

For information about how to change or check edit points which have been registered in the EDL, see Chapter 7.

Checking edit points

Proceed as follows to check edit points and durations.



Checking edit point data

1 Select a VCR by pressing the appropriate button (P1, P2 or R-VTR) in the SOURCE section.

2 Depending upon the type of data you want to check, press the IN button, the OUT button or the DUR button in the AUTO CONTROL section, turning it on.

- If you pressed the IN or OUT button, the IN or OUT indicator next to the time counter display for the selected VCR lights. If you pressed the DUR button, both the IN and OUT indicators light. The edit point or duration is displayed on the main monitor and in the corresponding time counter display.

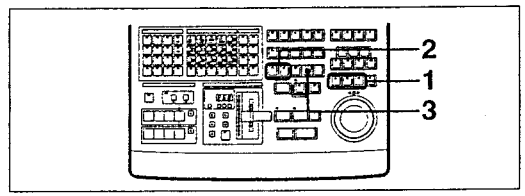
Note

A period (.) appears after "IN", "OUT" or "DUR" in the status display to indicate that edit time data has been calculated automatically. This can be verified at any time by selecting a VCR and pressing the IN, OUT or DUR button to display the time data.

- If an IN or OUT point has not yet been set, the corresponding indicator begins to flash and the time counter display shows "--:--:--:--".

Cuing up the tape to an edit point

You can view the scene which appears at a given edit point by cuing up the tape to that point. Proceed as follows.



Cuing up an edit point

1 Select a VCR by pressing the appropriate button (P1, P2 or R-VTR) in the SOURCE section.

2 To cue up an IN point, press the IN button in the AUTO CONTROL section, turning it on. To cue up an OUT point, press the OUT button.

The time code for the specified edit point appears in the main monitor status display and in the time counter display for that VCR.

3 Press the GO TO button in the AUTO CONTROL section, turning it on.
The tape is cued up to the specified point for the specified VCR. Monitors display still playback. "GO TO" appears in the main monitor status display.

4 Repeat steps **1** to **3** to cue up edit points for other VCRs.

If you press the GO TO button without pressing the IN or OUT button

The tape is cued up to the IN point.

Changing edit points

There are two ways to change an already set edit point.

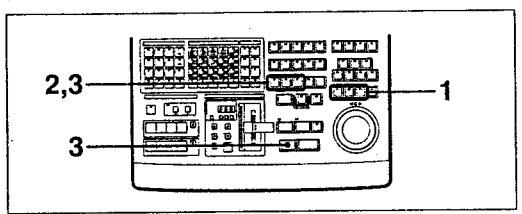
• Set the edit point again.

For details, see "Setting Edit Points" (page 5-13).

• Trim the edit point data.

Proceed as follows to trim edit point data.

Using the TRIM+ and TRIM– buttons in the AUTO CONTROL section



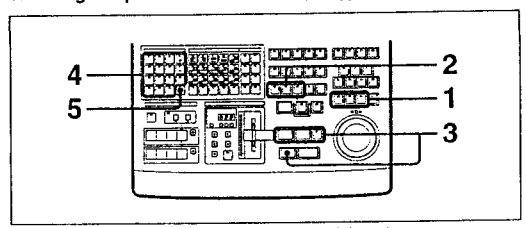
Trimming edit points with the TRIM+ and TRIM– buttons

1 Select a VCR by pressing the appropriate button in the SOURCE section.

2 Press the IN, OUT, or DUR button in the AUTO CONTROL section to display the value you want to change in the corresponding time counter display.

3 In the AUTO CONTROL section, press the TRIM+ (=SHIFT + IN) button, or the TRIM– (=SHIFT + OUT) button.
TRIM+ (=SHIFT + IN): Each time you press the button, the value increases by one frame.
TRIM– (=SHIFT + OUT): Each time you press the button, the value decreases by one frame.

Trimming edit points with the numeric keypad



Trimming edit points with the numeric keypad

1 Select a VCR by pressing the appropriate button in the SOURCE section.

2 Press the IN, OUT, or DUR button in the AUTO CONTROL section to display the value you want to change in the corresponding time counter display.

3 Depending upon the type of data, press the SET IN (=SHIFT + MARK IN) button, the SET OUT (=SHIFT + MARK OUT) button, or the SET DUR button in the TIME MARK section, putting the unit into numeric keypad mode.

SET IN (=SHIFT + MARK IN): To change IN point data. The SET IN indicator lights.
SET OUT (=SHIFT + MARK OUT): To change OUT point data. The SET OUT indicator lights.
SET DUR: To change the duration. The SET DUR button lights.

4 To increment the data, press the '+' key in the numeric keypad, or press the '–' key to decrement it. Then use the numeric keys to input the desired value (in frames).

Note
You can also enter the value before incrementing or decrementing it with the '+' and '–' keys.

5 Press the ENT key.
The changed data is confirmed, and the unit leaves numeric keypad mode.

To return changed edit points to their original values

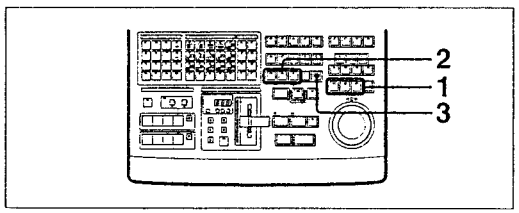
Press the LAST X (=SHIFT + DUR) button in the AUTO CONTROL section.

Note
When using CTL signals as edit point data, already set edit points cannot be changed from the numeric keypad.

Deleting edit points

There are two ways to delete edit points.
- Press the CLEAR button in the AUTO CONTROL section.
- Use the numeric keypad.

Deleting edit points with the CLEAR button



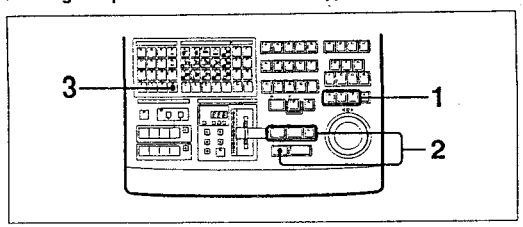
Deleting edit points with the CLEAR button

1 Select a VCR by pressing the appropriate button in the SOURCE section.

2 Press the IN, OUT, or DUR button in the AUTO CONTROL section to display the value you want to delete in the corresponding time counter display.

3 Press the CLEAR button in the AUTO CONTROL section.
The data is deleted. The IN or OUT indicator in the time counter display panel begins to flash, and "– – : – – : – – : – –" is displayed in the time counter display.

Deleting edit points with the numeric keypad



Deleting edit points with the numeric keys

1 Select a VCR by pressing the appropriate button in the SOURCE section.

2 In the TIME MARK section, press the SET IN (=SHIFT + MARK IN) button, the SET OUT (=SHIFT + MARK OUT) button, or the SET DUR button, putting the unit into numeric keypad mode.

SET IN (=SHIFT + MARK IN): To delete an IN point. The SET IN indicator lights.
SET OUT (=SHIFT + MARK OUT): To delete an OUT point. The SET OUT indicator lights.
SET DUR: To delete the duration. The SET DUR button lights.

3 Without entering any numeric data, press the ENT button in the numeric keypad.
The data is deleted. The IN or OUT indicator in the appropriate time counter display panel begins to flash. If you now press one of the IN, OUT or DUR buttons, "– – : – – : – – : – –" appears in the time counter display.

To restore a deleted edit point

Press the LAST X (=SHIFT + DUR) button in the AUTO CONTROL section.

Selecting Special Effects

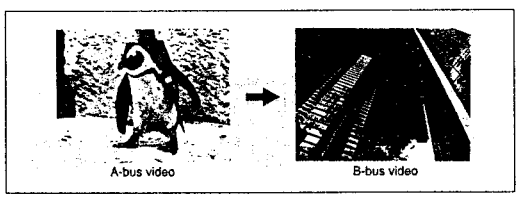
You can choose from among four kinds of special effects to switch between or combine two video signals: cut, dissolve, wipe, and key.

This section will describe how to select and combine these effects. Note that the descriptions assume that transitions begin with the fader lever, AUDIO FOLLOW button and transition indicators in the following state.

Fader lever: Pushed all the way toward side A
AUDIO FOLLOW button: Lit
Transistion indicators: Topmost indicator on side A is lit, and all others are off.

Cut

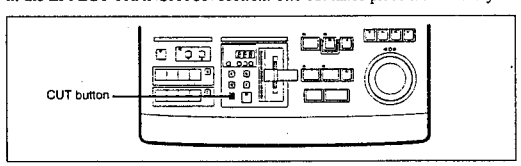
Cut is an effect which switches instantly between two video signals.
If there are audio inputs to the buses, they are cut in synchronization with the video signals.



Cut

Executing the cut effect

To excute a cut, wait for the desired scene and then press the CUT button in the EFFECT TRANSITION section. The cut takes place immediately.



Executing a cut

Notes

- When using effects such as wipe and dissolve, you can still get a cut effect by pressing the CUT button. The cut takes place as as soon as you press the button.
- In A/B roll editing, set the transition time to 0.

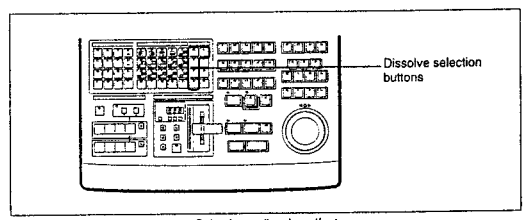
For details, see "Setting the Transition Time" (page 5-61).

Dissolve

Dissolve (or mix) is a cross-fade effect which fade outs A-bus video while fading in B-bus video. Midway through the transition, video signals from both buses overlap.
If there are audio inputs to the buses, they are cross-faded in synchronization with the video cross-fade.

Selecting a dissolve effect

Press one of the NORMAL MIX, MOSAIC MIX, POSTRZ MIX, B&W MIX and LUMINA CLIP TRANS buttons in the MIX/EFFECT section.

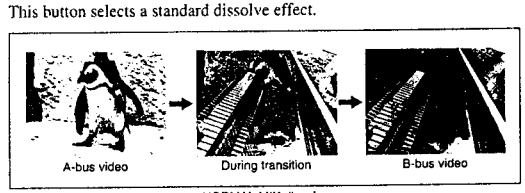


Selecting a dissolve effect

Dissolve types

The types of effect selectable with the dissolve selection buttons are as follows.

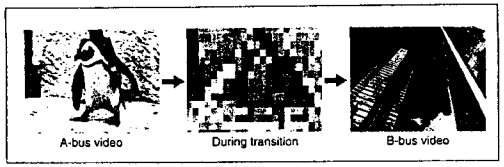
NORMAL MIX button
This button selects a standard dissolve effect.



NORMAL MIX dissolve

MOSAIC MIX button

A mosaic pattern appears during the transition.



MOSAIC MIX dissolve

To cancel a mosaic mix, press the NORMAL MIX button.

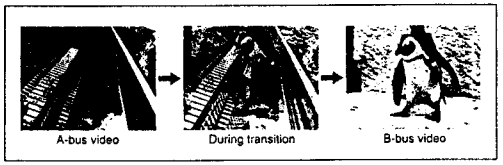
Note

Mosaic mix cannot be combined with the following input effects.

- Multi-screen (MULTI) *(page 5-49)*
- Multi-screen 2 (MULTI 2) *(page 5-49)*
- Mosaic (MOSAIC) *(page 5-58)*
- Zoom (ZOOM) *(page 5-56)*

POSTRZ (posterization) MIX button

During the transition, hues are simplified by quantizing brightness to the levels 16→8→4→8→16, for a poster-like effect.



POSTRZ MIX dissolve

To cancel a posterization mix, press the NORMAL MIX button.

Note

A posterization mix cannot be combined with the posterization input effect *(page 5-53)*.

B&W MIX button

During the transition, the image changes to black and white before returning to color.

To cancel a B&W mix, press the NORMAL MIX button.

LUMINA (luminance) CLIP TRANS (transition) button

This effect provides one type of luminance key. As the transition proceeds, portions of B-bus video of progressively increasing brightness are replaced by the corresponding portions of A-bus video.

If the REVERSE button in the EFFECT TRANSITION section is lit, the brighter portions of A-bus video are inserted first, followed by the darker portions.

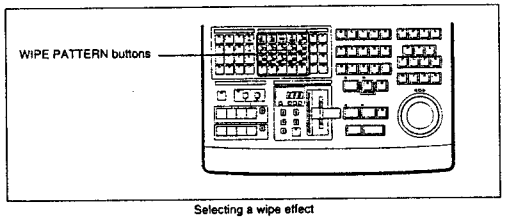
To cancel the luminance clip transition effect, press the NORMAL MIX button, or press the LUMINA CLIP TRANS button once more.

Wipe

A wipe is an effect which uses a geometrical pattern to replace A-bus video with B-bus video.
If there are audio inputs to the buses, they are cross-faded as the video wipe progresses.

Selecting a wipe effect

Press one of the buttons in the WIPE PATTERN section, turning it on.



Selecting a wipe effect

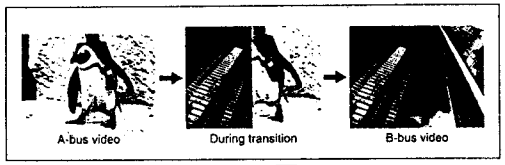
Note
You may see some momentary picture breakup if you change the wipe pattern with the fader lever positioned midway between the A-bus and B-bus sides. This is normal and not a malfunction in the unit.

Wipe patterns

The wipe patterns selectable with the buttons in the WIPE PATTERN section are as follows.

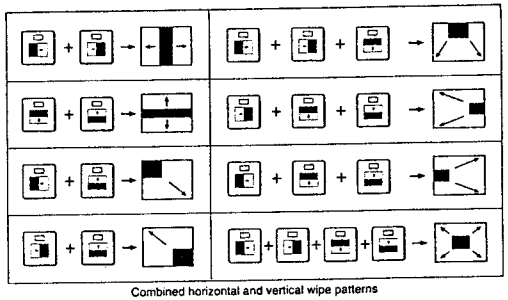
Horizontal and vertical wipe buttons ( ).
B-bus video appears on the edge of A-bus video. The pattern (B-bus video) expands in the direction indicated by the arrow, replacing A-bus video.

Example: Wipe selected with button



Wipe selected with button

A variety of patterns can be created by pressing more than one of the horizontal and vertical wipe buttons. Following are some examples.



Combined horizontal and vertical wipe patterns

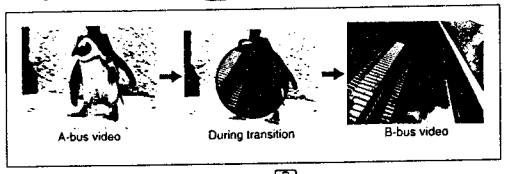
Notes
- You can change the position of the pattern ( ) created by pressing all four of the buttons or by pressing the button.

For details, see "Changing the pattern position" (page 5-39).

- When two or more of the horizontal/vertical wipe buttons are lit, cancel a pattern selection by pressing the appropriate button, turning it off.

buttons
B-bus video appears in the center of A-bus video, and replaces A-bus video as the pattern expands.

Example: Wipe selected with button



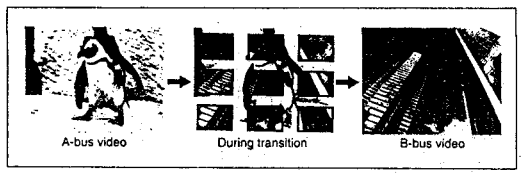
Wipe selected with button

Note
You can change the position of these patterns.

For details, see "Changing the pattern position" (page 5-39).

button

A-bus video is divided into a 3 by 3 grid, and B-bus video appears in center of each of the small blocks, expanding to replace A video.



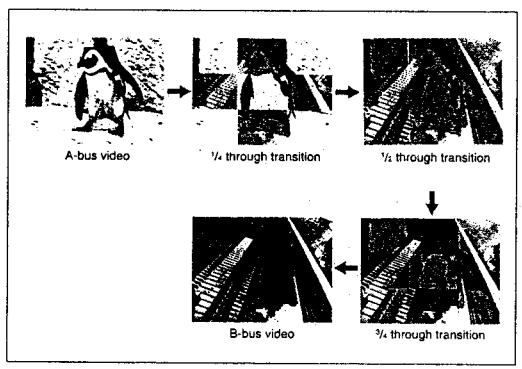
Wipe selected with button

Note

You can use this wipe in combination with the multi-screen input effect (MULTI, MULTI 2 buttons).

button

B-bus video appears as thin stripes in four locations, and expands to the right. At a stage 1/4 of the way through the transition, the screen is divided into a 3 by 3 grid, like the pattern shown on the button. Subsequent stages are shown below.



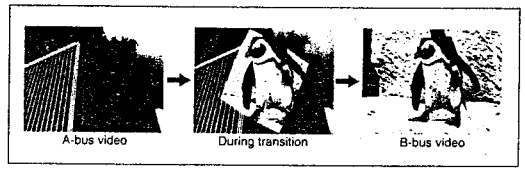
Wipe selected with button

Note

This wipe can be combined for impressive effects with the multi-screen input effect (MULTI, MULT2 buttons).

button

B-bus video appears in the center of A-bus video, and replaces A-bus video as the pattern expands. During the transition the square pattern rotates in a clockwise direction.



Wipe selected with button

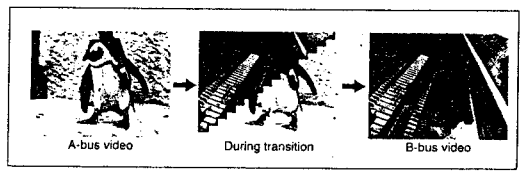
Note

You can change the position of this pattern.

For details, see "Changing the pattern position" (page 5-39).

button

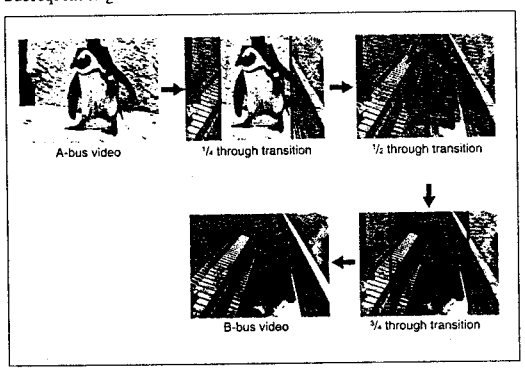
B-bus video appears in the upper left corner of A-bus video, and replaces A-bus video as the zigzag border moves toward the lower right.



Wipe selected with button

button

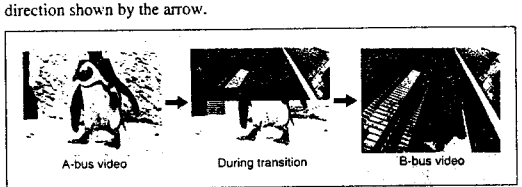
B-bus video appears as thin stripes on the left and right sides of A-bus video, and replaces A-bus video as the stripes move toward the center. Halfway through the transition, the stripes meet in the center of the screen. Subsequent stages are shown below.



Wipe selected with button

button

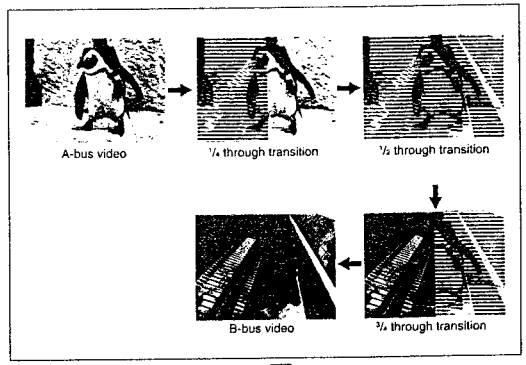
A striped band appears in the upper left corner of A-bus video. B-bus video replaces A-bus video as the band snakes through the screen in the direction shown by the arrow.



Wipe selected with button

(split slide) button

Stripes of B-bus video appear at the edge of A-bus video, and reach the opposite side halfway through the transition. As the transition progresses, stripes of A-bus video begin to slide off the screen, finally leaving only B-bus video.



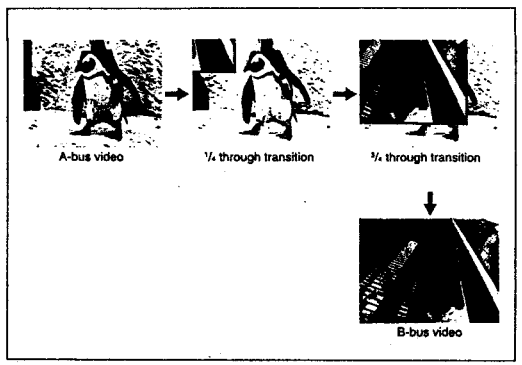
Wipe selected with the (split slide) button

Notes

- The direction of the slide can be changed with the horizontal/vertical wipe buttons ( ).
- A split slide can be combined with a scroll wipe *(page 5-38)*, although the combined transition may not be as smooth as a normal transition.

For details, see "Selecting the wipe direction" (page 5-40).

SLIDE IN button
B-bus video slides in, replacing A-bus video.



Wipe selected with the SLIDE IN button

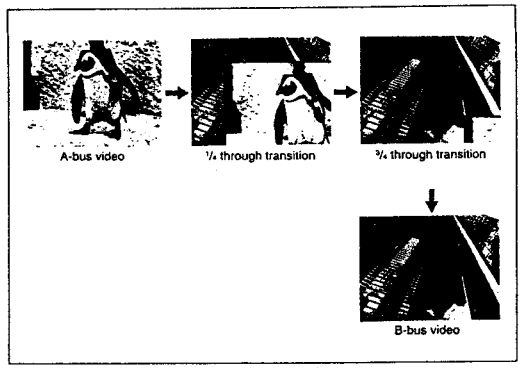
Notes

- The direction of the slide can be changed with the horizontal/vertical wipe buttons ( ).

For details, see "Selecting the wipe direction" (page 5-40).

- The transition in the slide in effect may not always be as smooth as a normal transition.
- The slide in effect cannot be combined with the mosaic *(page 5-58)* and zoom *(page 5-56)* input effects.

SLIDE OUT button
A-bus video slides out, leaving B-bus video.



Wipe selected with the SLIDE OUT button

Notes

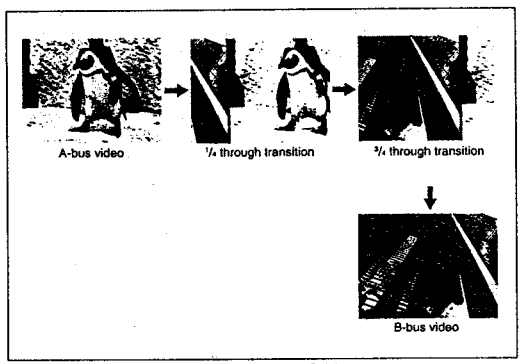
- The direction of the slide can be changed with the horizontal/vertical wipe buttons ( ).

For details, see "Selecting the wipe direction" (page 5-40).

- The transition in the slide out effect may not always be as smooth as a normal transition.
- The slide out effect cannot be combined with the mosaic *(page 5-58)* and zoom *(page 5-56)* input effects.

SCROLL button

B-bus video slides in, while A-bus video slides out.



Wipe selected with the SCROLL button

Notes

- The direction of the scroll can be changed with the horizontal/vertical wipe buttons ( ).

For details, see "Selecting the wipe direction" (page 5-40).

- The transition in the scroll effect may not always be as smooth as a normal transition.
- The scroll effect can be combined with a split slide wipe *(page 5-35)*.
- The scroll effect cannot be combined with the mosaic *(page 5-58)* and zoom *(page 5-56)* input effects.

USER1 to USER4 buttons

Frequently used patterns can be assigned to these buttons using the SET USER1 to SET USER4 buttons and the numeric keypad.

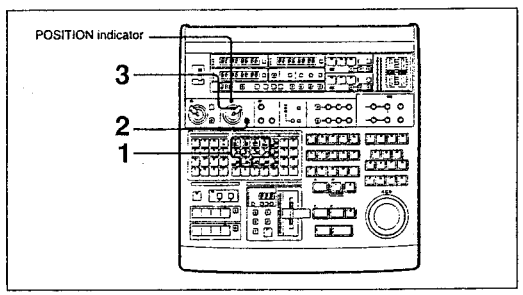
For details, see "Assigning wipe patterns to the USER1 to USER4 buttons" (page 5-42).

Changing the pattern position

You can change the center positions of the following patterns.

- Patterns selected with the buttons.
- Patterns selected by pressing the buttons without holding down the SHIFT button.
- The pattern ( ) obtained by pressing and lighting all of the buttons.

To change the positions, proceed as follows.



Changing a pattern position

1 Select a pattern with a button in the WIPE PATTERN section.
The POSITION indicator lights.

2 Press the POSITION ON/OFF button.
The button lights, and the POSITION joystick is enabled.

3 While viewing the monitor, move the joystick to adjust the pattern position.

To restore the original pattern position

Press the POSITION ON/OFF button, turning it off.

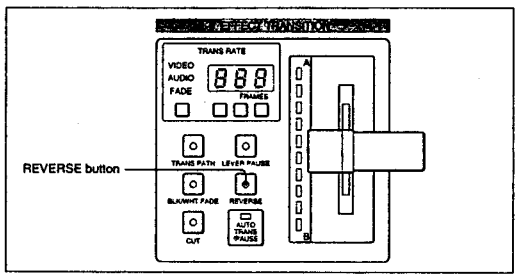
Notes

- The POSITION ON/OFF button should normally be off, except when you are intentionally changing a pattern position.
- When the POSITION ON/OFF button is on, some wipe patterns are slightly larger than normal.

Selecting the wipe direction

To reverse the wipe direction

Press the REVERSE button in the EFFECT TRANSITION section, turning it on.



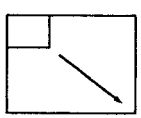
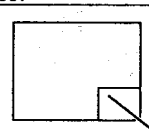
To reverse the wipe direction

To change the direction of a specific wipe

When using effects selected with the SPLIT SLIDE, SLIDE IN, SLIDE OUT and SCROLL buttons, the horizontal and vertical wipe buttons ( ) may be used to change the direction.

- **SPLIT SLIDE and SCROLL**
  Press one of the horizontal or vertical wipe buttons, so that it begins to flash.
- **SLIDE IN and SLIDE OUT**
  Press one of the horizontal or vertical wipe buttons, so that it begins to flash.
  If you press one each of the horizontal wipe buttons ( ) and the vertical wipe buttons ( ), the direction becomes a slant.

Example: If and are flashing

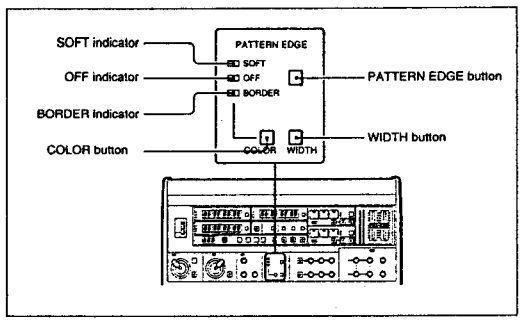
SLIDE IN	SLIDE OUT
	
B-bus video slides in from upper left.	A-bus video slides out from lower light.

Notes

- To extinguish a flashing horizontal or vertical wipe button, press it once more.
- If you select a slide or scroll wipe with one of the horizontal or vertical wipe buttons, and then select another wipe or mix by pressing the SPLIT SLIDE, SLIDE IN, SLIDE OUT or SCROLL button, the most recently pressed horizontal or vertical wipe button starts to flash.

Adjusting pattern edges

Except in the case of wipes selected with the , and buttons and a wipe selected by pressing the button alone (without holding down the SHIFT button), it is possible to adjust the pattern edge at the border between A-bus and B-bus signals. Use the controls in the PATTERN EDGE section.



Adjusting pattern edges

To make the edge softer

Press the PATTERN EDGE button, lighting the SOFT indicator.

To make the edge sharper

Press the PATTERN EDGE button, lighting the OFF indicator.

To give the edge a colored border

Press the PATTERN EDGE button, lighting the BORDER indicator, and then press the COLOR button to select one of the 15 border colors. The colors change in the opposite order if you hold down the SHIFT button while pressing the COLOR button.

Note

For a wipe selected by pressing the button while holding down the SHIFT button, you can change background colors using the COLOR button.

To change the border width

Press the PATTERN EDGE button, lighting the BORDER indicator, and then press the WIDTH button to change the width in three steps.

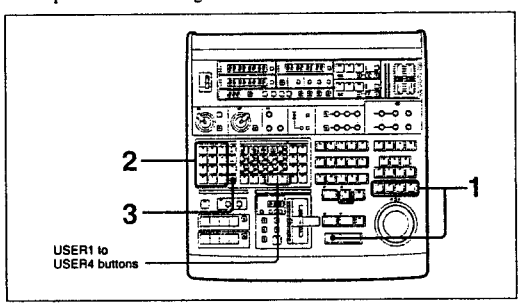
Assigning wipe patterns to the USER1 to USER4 buttons

The procedure for assigning wipe patterns to the USER1 to USER4 buttons in the WIPE PATTERN selection section is as follows.

Note

The two user wipe call buttons (USER1/USER3 and USER2/USER4) function as the USER1 to USER4 buttons:

- USER1/USER3 functions as USER1 when pressed alone, and as USER3 when pressed while holding down the SHIFT button.
- USER2/USER4 functions as USER2 when pressed alone, and as USER4 when pressed while holding down the SHIFT button.

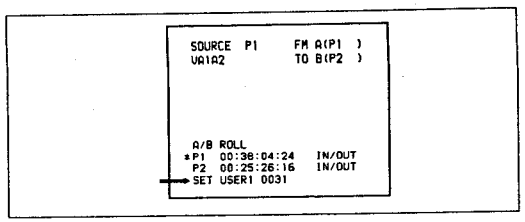


1 Press one of the SET USER1 to SET USER4 buttons in the SOURCE section.

SET USER1 (= SHIFT + P1): Assign a wipe pattern to the USER1 button.
SET USER2 (= SHIFT + P2): Assign a wipe pattern to the USER2 button.
SET USER3 (= SHIFT + R-VTR): Assign a wipe pattern to the USER3 button.
SET USER4 (= SHIFT + AUX): Assign a wipe pattern to the USER4 button.

The numeric keypad buttons light, indicating that the unit has entered numeric input mode.
At the same time, the name of the wipe pattern assignment button you pressed and the wipe pattern number currently assigned to the corresponding user wipe call button are displayed in the recorder time data line of the status display.

(Continued)

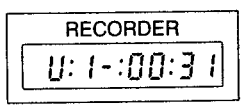


Note

The factory default assignments to the user wipe call buttons are:
USER1: 0031 **USER2:** 0023 **USER3:** 0056 **USER4:** 0059

2 Enter the pattern number from the numeric keypad.
The user assignment number and the pattern number appear in the recorder time counter display.

Example: When you assign pattern number 0031 to the USER1 button:



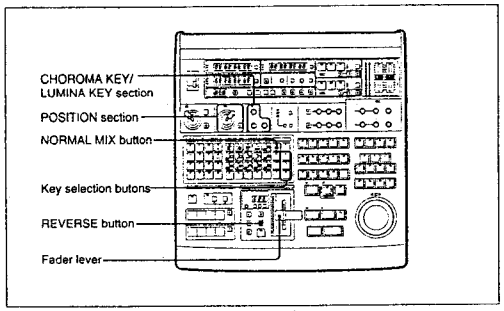
For illustrations of the patterns for each pattern number, see "Wipe Patterns" (page A-9).

3 Press the ENT key in the numeric keypad section.
The pattern for the number entered in step **2** is assigned to the specified user wipe call button, and the recorder time counter display returns to display of normal time data.

Key

This effect removes certain portions of B-bus video, replacing them with A-bus video.

The following controls are used in key effect operations.



Key effect controls

Selecting a key effect

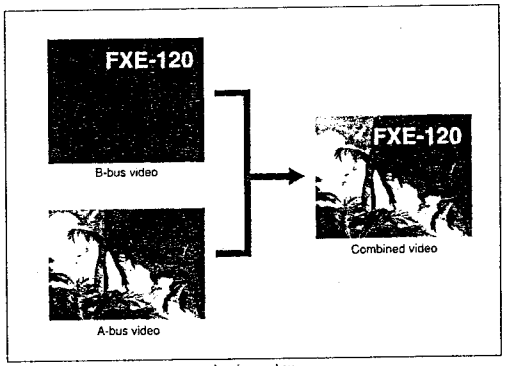
To select a key effect, pull the fader lever all the way down to the B side and press one of the key selection buttons (LUMINA KEY, CHROMA KEY or P IN P) in the MIX/EFFECT section, turning it on.

Key types

The effects selectable with the key selection buttons are as follows.

LUMINA (luminance) KEY button

Portions of B-bus video whose luminance (brightness) is equal to or higher than a specified reference level are replaced by A-bus video.



Luminance key

The reference luminance level is specified using knobs in the CHROMA KEY/LUMINA KEY section.

- For bright sections of the video, use the CLIP/CLIP HIGH knob.
- For dark sections, use the GAIN/CLIP LOW knob.

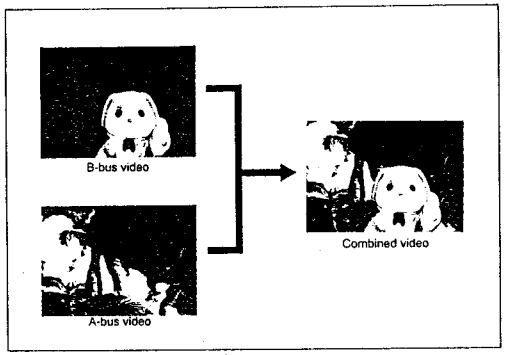
To cancel the luminance key effect, press the NORMAL MIX button, or press the LUMINA KEY button once more.

Note

The luminance key effect can be used in combination with SLIDE IN or SLIDE OUT wipes.

CHROMA KEY button

Portions of B-bus video of a specified color are replaced by A-bus video.



Chroma key

The reference color is specified using knobs in the CHROMA KEY/ LUMINA KEY section.

- Specify the hue with the HUE knob.
- Specify the saturation with the CLIP/CLIP HIGH knob.
- To adjust the brightness of the inserted video (A-bus video), use the GAIN/CLIP LOW knob.

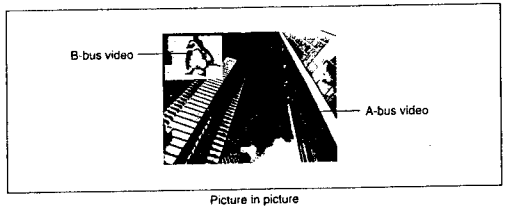
To cancel the chroma key effect, press the NORMAL MIX button, or press the CHROMA KEY button once more.

Note

When the chroma key effect is selected, the zoom input effect cannot be applied to B-bus video.

P IN P (picture-in-picture) button

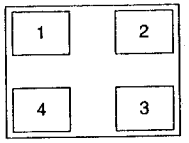
B-bus video is reduced to 1/3 normal size both horizontally and vertically, and inserted into A-bus video.



Picture in picture

There are two ways to specify the position at which B-bus video will be inserted.

- Press the lit P IN P button while holding down the SHIFT button.



Each time the button is pressed, B-bus video changes position in the order 1 → 2 → 3 → 4 → 1... (In the actual picture, the reduced video will be slightly further left than the positions shown.)

- Press the POSITION ON/OFF button in the POSITION section, turning it on, and adjust the position with the POSITION joystick.

To cancel the picture-in-picture effect, press the NORMAL MIX button or press the P IN P button once more.

Notes

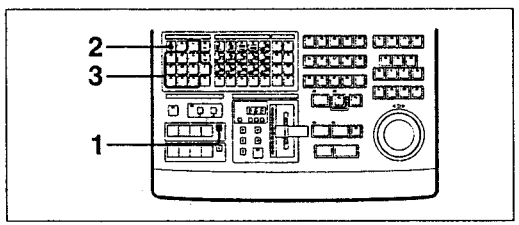
- When the P IN P button is lit, a wipe pattern selected by pressing the [1], [2], [3] or [4] button without holding down the SHIFT button appears in the reduced video.
- Picture-in-picture video consists of a single field, so the B-BUS and FIELD/FRAME buttons in the INPUT EFFECT section light automatically when the P IN P button is lit.
- When the P IN P button is lit, the following input effects cannot be applied to B-bus signals.
  - Multi-screen (MULTI) *(page 5-49)*
  - Multi-screen 2 (MULTI 2) *(page 5-49)*
  - Mosaic (MOSAIC) *(page 5-58)*
  - Zoom (ZOOM) *(page 5-56)*
  - Picture trail (PIX TRAIL) *(page 5-52)*

Input Effects

In addition to video switching effects such as wipes, you can apply digital effects to bus signals with the buttons in the INPUT EFFECT section. These effects may be applied independently to bus A and bus B.

Proceed as follows to select digital effects for each bus.

Example: Selecting input effects for bus A



Selecting digital effects for bus A

1 Press the A-BUS INPUT EFFECT ON/OFF button in the VIDEO INPUT SELECT section, turning it on.

2 Press the A-BUS button in the INPUT EFFECT section, turning it on.

3 Press the INPUT EFFECT button corresponding to the desired effect. You can press several buttons for combined effects.

For more information about combined effects, see "Combined input effects" (page 5-59).

Follow the same procedure to select input effects for B-bus video.

Note

If setup menu item 119 INPUT EFFECT AUTO SELECT has been set to ON, input effects are applied automatically to the bus selected by the fader lever. The A-BUS and B-BUS buttons in the INPUT EFFECT section are disabled and do not light when pressed.

For details, see Chapter 8.

Freeze

This effect reads a video frame into a frame memory buffer, and outputs a still picture (freeze frame) consisting of the contents of frame memory. Digital effects such as monotone and mosaic may be applied to the frame memory output.

To select the freeze effect
Press the FREEZE button, turning it on.

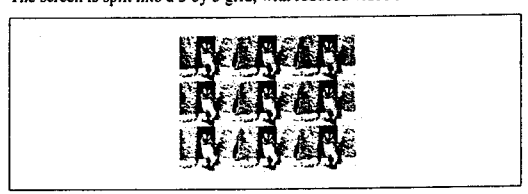
About frame freeze and field freeze
When the FREEZE button lights, the FRAME/FIELD button lights automatically. While it is lit, the freeze video output consists of a single field, which may reduce blurring if there is rapid motion in the picture.

To select output of a complete frame (two fields), press the FRAME/FIELD button, turning it off.

To return to normal playback
Press the FREEZE button, turning it off, or press the RESET button, turning it on.

Multiple screens

The screen is split into a 3 by 3 grid, with reduced video in each window.



Multiple screens

To select the multi-screen effect
Press the MULTI or MULTI 2 button.
The button lights, and moving video reduced to 1/3 normal size both vertically and horizontally appears in the upper left corner.
- You can change the position of the moving video by pressing the '+' and '–' keys in the numeric keypad.
- Multi-screen effects can be combined with the strobe effect.

When the '+' and '–' keys are pressed

When the MULTI button is lit

1	2	3
4	5	6
7	8	9

'+' key

When the '+' key is pressed for the first time, the video in block 1 changes to a still picture and the video in block 2 begins to move. Each time the key is pressed, the moving video moves to the next block, in the order shown at left. When the moving video reaches block 9, pressing the '+' key stops motion in all blocks. Press it again and the video in block 1 starts to move.

1	9	8
7	6	5
4	3	2

'–' key

When the '–' key is pressed for the first time, the video in block 1 changes to a still picture and the video in block 2 begins to move. Each time the key is pressed, the moving video moves to the next block, in the order shown at left. When the moving video reaches block 9, pressing the '–' key makes the video in block 1 start to move. Press it again and the video stops in all blocks.

When the MULTI 2 button is lit

1	2	3
8	9	4
7	6	5

'+' key

The effect is the same as the MULTI effect, except that the order is as shown at left.

1	9	8
3	2	7
4	5	6

'–' key

The effect is the same as the MULTI effect, except that the order is as shown at left.

When the STROBE button is pressed

When the MULTI button is lit

1	2	3
4	5	6
7	8	9

STROBE plus MULTI effect

Pressing the STROBE button while the MULTI button is lit causes the blocks shown at left to change to still video, one after the other in the order shown. When block 9 is reached, new still pictures begin to appear from the upper left block in the order 1 → 2 → 3..., repeating the process indefinitely until the STROBE button is pressed once more, turning it off.
The '+' and '–' keys can be used to adjust the strobe interval. Pressing the '+' key increases the interval and pressing the '–' key decreases it. When the maximum or minimum interval is reached, the '+' or '–' key begins to flash.

When the MULTI 2 button is lit

1	2	3
8	9	4
7	6	5

STROBE plus MULTI 2 effect

Pressing the STROBE button while the MULTI 2 button is lit causes the blocks shown at left to change to still video, one after the other in the order shown. The strobe effect ends when block 9 is reached. Block 9 changes to a moving picture, and the other 8 blocks remain as still pictures.
You can adjust the strobe interval with the '+' and '–' keys before you execute an edit using this effect.

To return to normal playback

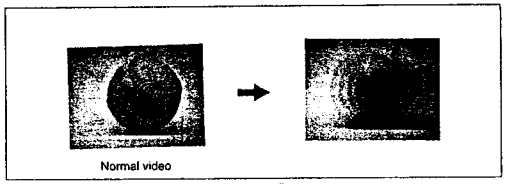
Press the MULTI or MULTI 2 button, turning it off, or press the RESET button, turning it on.
After returning to a normal picture, the MULTI or MULTI 2 button can be pressed again to recall the most recent multi-screen picture. The button lights, and a moving picture automatically appears in the most recently moving block.

Notes

- The multi-screen effect can be combined with wipes selected with the and buttons *(page 5-32)*, for inpressive multi-screen wipes.
- The multi-screen effect cannot be combined with the mosaic mix effects *(page 5-28)*. Nor can it be applied to the reduced picture (B-bus video) in the picture-in-picture effect *(page 5-47)*.

Picture trail

This effect creates a trail of images behind a moving subject.



Picture trail

To select the picture trail effect

Press the PIX TRAIL button, turning it on.

To return to normal playback

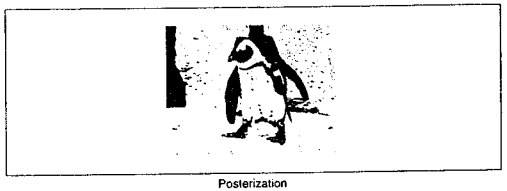
Press the PIX TRAIL button, turning it off, or press the RESET button, turning it on.

Notes

- It is not possible to adjust the length of time the trailing pictures remain visible.
- The picture trail effect cannot be applied to the reduced picture (B-bus video) in the picture-in-picture effect *(page 5-47)*.

Posterization

This effect produces a picture with simplified hues, like a poster. The picture is simplified by quantizing brightness to 16, 8 or 4 levels.



Posterization

To select the posterization effect

Press the POSTRZ button, turning it on.

To adjust the number of levels

To reduce the number of levels (increase the posterization effect), press the '+' key in the numeric keypad. To increase the number of levels, press the '–' key.

To return to normal playback

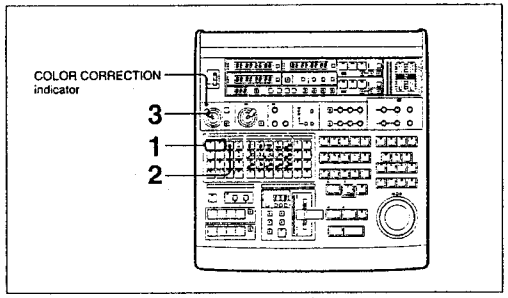
Press the POSTRZ button, turning it off, or press the RESET button, turning it on.

Note

The posterization input effect cannot be combined with a posterization dissolve.

Color correction

By using the color balance controls, you can adjust the white balance and change the overall tonal balance of the picture. Proceed as follows.

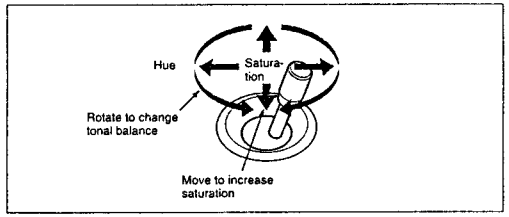


Performing color correction

1 Select the object of the color correction by pressing the A-BUS button or B-BUS button in the INPUT EFFECT section.

2 Press the COLOR CORRECT button in the INPUT EFFECT section, turning it on.
The COLOR CORRECTION indicator lights to show that the controls in the COLOR CORRECTION section are enabled.

3 While viewing the monitor, move the joystick to perform color correction.



About the correction range

The color correction range (sensitivity of the joystick) can be set to one of two steps under item 405 COLOR CORRECTION ADJUSTMENT WIDTH in the setup menu.

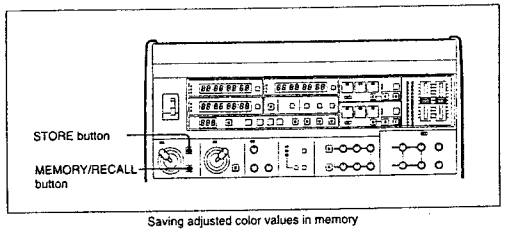
For details, see Chapter 8.

When adjusting the white balance

Find a portion of the picture that should appear as pure white. Then, while viewing the monitor, move the joystick until the white portion is shown as pure white.

To save the adjusted color values in memory

Press the STORE button together with the MEMORY/RECALL button.



Saving adjusted color values in memory

To load adjusted values from memory

Press the MEMORY/RECALL button only, turning it on. To return to the state before the values were recalled, press the button once more, turning it off.

To return to the original color balance

Press the COLOR CORRECT button, turning it off, or press the RESET button, turning it on.

Monotone

This effect produces a monotone (monochrome) picture.

To select the monotone effect
Press the MONOTONE button, turning it on.
Pressing the COLOR CORRECT button as well, turning it on, allows you to adjust the monotone color with the controls in the COLOR CORRECTION section.

To return to normal playback
Press the MONOTONE button, turning it off, or press the RESET button.

Strobe

This effect freezes the picture at selected frame intervals.

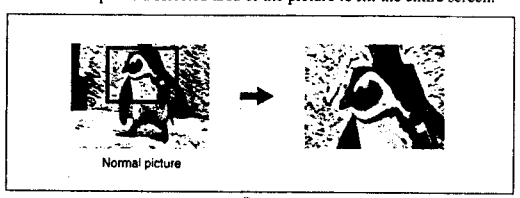
To select the strobe effect
Press the STROBE button, turning it on.

To select the frame interval
Press the '+' key in the numeric keypad to increase the frame interval, and the '–' key to decrease it. When the maximum or minimum interval is reached, the '+' or '–' key begins to flash.

To return to normal playback
Press the STROBE button, turning it off, or press the RESET button, turning it on.

Zoom

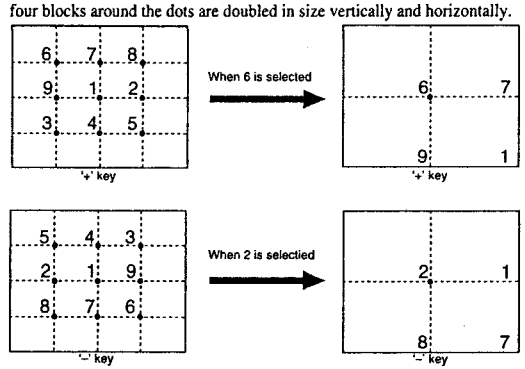
This effect expands a selected area of the picture to fill the entire screen.



Zoom

To select the zoom effect
Press the ZOOM button, turning it on.

To select the zoom center
Press the '+' or '–' key. Pressing the key selects a set of four zoom blocks, centered around the dots numbered 1 to 9 in the illustrations below. The four blocks around the dots are doubled in size vertically and horizontally.



(In the actual picture, zoom centers will be sightly to the left of the positions shown by the dots in the illustrations above.)

To return to normal playback
Press the ZOOM button, turning it off, or press the RESET button, turning it on.
If you press the ZOOM button again, the most recently selected blocks automatically expand to fill the screen.

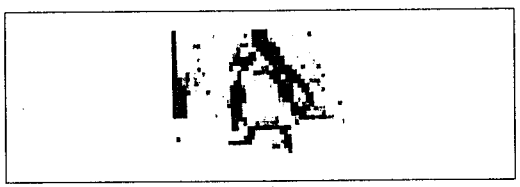
Note

The zoom effect cannot be combined with the following wipes.
- SLIDE IN *(page 5-36)*
- SLIDE OUT *(page 5-37)*
- SCROLL *(page 5-38)*
- MOSAIC MIX *(page 5-28)*

The zoom effect cannot be applied to the following kinds of video.
- The reduced picture (B-bus video) in the picture-in-picture effect *(page 5-47)*.
- B-bus video in the CHROMA KEY effect *(page 5-46)*.

Mosaic

This effect applies a mosaic grid to the picture. The coarseness of the mosaic can be adjusted.



Mosaic

To select the mosaic effect

Press the MOSAIC button, turning it on.

To adjust the coarseness of the mosaic

Press the '+' key for a coarser grid, and the '–' key for a finer one. The coarseness can be adjusted in four steps. When the maximum or minimum level is reached, the '+' or '–' key begins to flash.

To return to normal playback

Press the MOSAIC button, turning it off, or press the RESET button, turning it on.

Note

The mosaic effect cannot be combined with the following effects.
- MOSAIC MIX *(page 5-28)*
- SLIDE IN *(page 5-36)*
- SLIDE OUT *(page 5-37)*
- SCROLL *(page 5-38)*

Note also that the mosaic effect cannot be applied to B-bus reduced video when the picture-in-picture (P IN P) *(page 5-47)* effect is selected.

Combined input effects

You can combine input effects in various ways. The tables below show the results of button combinations.

Table A shows the effects obtained when one button in the INPUT EFFECT section is lit and another button is pressed.
Tables B-1 and B-2 show the effects obtained when two buttons are lit and a third button is pressed.

Note

The posterization (POSTRZ button) and monotone (MONOTONE button) effects can be combined with any other input effect. Therefore they are omitted from the tables below.

Combined input effects (A)

Pressed first / Pressed second	Field[a]					Field or Frame[b]	
	MOSAIC	MULTI	MULTI 2	STROBE	ZOOM	FREEZE	PIX TRAIL
MOSAIC	Off	MOSAIC	MOSAIC	STROBE MOSAIC	MOSAIC	FREEZE MOSAIC	PIX TRAIL MOSAIC
MULTI	MULTI	Off	MULTI	STROBE MULTI	MULTI	MULTI	MULTI
MULTI 2	MULTI 2	MULTI 2	Off	STROBE MULTI 2	MULTI 2	MULTI 2	MULTI 2
STROBE	MOSAIC STROBE	MULTI STROBE	MULTI 2 STROBE	Off	ZOOM STROBE	STROBE	PIX TRAIL STROBE
ZOOM	ZOOM	ZOOM	ZOOM	STROBE ZOOM	Off	ZOOM	ZOOM
FREEZE	MOSAIC FREEZE	MULTI FREEZE	MULTI 2 FREEZE	FREEZE	ZOOM FREEZE	Off	PIX TRAIL FREEZE
PIX TRAIL	MOSAIC PIX TRAIL	PIX TRAIL	PIX TRAIL	STROBE PIX TRAIL	PIX TRAIL	PIX TRAIL	Off

a) The effects are applied to field data.
b) The effects are applied to field data if the FRAME/FIELD button is lit. Otherwise they are applied to frame data.

Combined input effects (B-1)

Pressed first / Pressed second	Field[a] MOSAIC STROBE	MOSAIC FREEZE	MULTI STROBE	MULTI FREEZE	MULTI 2 STROBE	MULTI 2 FREEZE	STROBE ZOOM
MOSAIC	STROBE	FREEZE	STROBE MOSAIC	FREEZE MOSAIC	STROBE MOSAIC	FREEXE MOSAIC	STROBE MOSAIC
MULTI	STROBE MULTI	MULTI	Off	Off	STROBE MULTI	MULTI	STROBE MULTI
MULTI 2	STROBE MULTI 2	MULTI 2	STROBE MULTI 2	MULTI 2	Off	Off	STROBE MULTI 2
STROBE	MOSAIC	MOSAIC STROBE	MULTI	MULTI STROBE	MULTI 2	MULTI 2 STROBE	ZOOM
ZOOM	STROBE ZOOM	ZOOM	STROBE ZOOM	ZOOM	STROBE ZOOM	ZOOM	STROBE
FREEZE	MOSAIC FREEZE	MOSAIC	MULTI FREEZE	MULTI	MULTI 2 FREEZE	MULTI 2	ZOOM FREEZE
PIX TRAIL	MOSAIC STROBE PIX TRAIL	MOSAIC PIX TRAIL	STROBE PIX TRAIL	PIX TRAIL	STROBE PIX TRAIL	PIX TRAIL	STROBE PIX TRAIL

a) The effects are applied to field data.
b) The effects are applied to field data if the FRAME/FIELD button is lit. Otherwise they are applied to frame data.

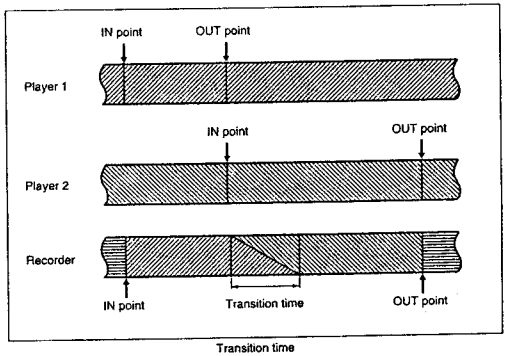
Combined input effects (B-2)

Pressed first / Pressed second	Field[a] STROBE PIX TRAIL	ZOOM FREEZE	STROBE MULTI	STROBE MULTI 2	MOSAIC PIX TRAIL STROBE	MOSAIC PIX TRAIL FREEZE	Field or Frame[b] PIX TRAIL FREEZE
MOSAIC	STROBE PIX TRAIL MOSAIC	FREEZE MOSAIC	STROBE MOSAIC	STROBE MOSAIC	PIX TRAIL STROBE	PIX TRAIL FREEZE	PIX TRAIL FREEZE MOSAIC
MULTI	STROBE MULTI	MULTI	STROBE	STROBE MULTI	STROBE MULTI	MULTI	MULTI
MULTI 2	STROBE MULTI 2	MULTI 2	STROBE MULTI 2	STROBE	STROBE MULTI 2	MULTI 2	MULTI 2
STROBE	PIX TRAIL	ZOOM STROBE	MULTI	MULTI 2	MOSAIC PIX TRAIL	MOSAIC PIX TRAIL STROBE	PIX TRAIL STROBE
ZOOM	STROBE ZOOM	Off	STROBE ZOOM	STROBE ZOOM	STROBE ZOOM	ZOOM	ZOOM
FREEZE	PIX TRAIL FREEZE	ZOOM	MULTI FREEZE	MULTI 2 FREEZE	MOSAIC PIX TRAIL FREEZE	MOSAIC PIX TRAIL	PIX TRAIL
PIX TRAIL	STROBE	PIX TRAIL	STROBE PIX TRAIL	STROBE PIX TRAIL	MOSAIC STROBE	MOSAIC FREEZE	FREEZE

a) The effects are applied to field data.
b) The effects are applied to field data if the FRAME/FIELD button is lit. Otherwise they are applied to frame data.

Setting the Transition Time

This section explains how to set the transition time, or duration, of special effects.



Transition time

Note

You do not need to set a transition time if you have selected cut editing by pressing the CUT EDIT button in the EDIT TYPE section.
When using dissolve or wipe effects, the effect is the same as a cut if the transition time is set to 0.

There are two ways to set the transition time.
- Use the TRANS RATE buttons in the EFFECT TRANSITION section.
- Use the numeric keypad.

Setting video and audio transition times independently

If you have selected split editing (the AUDIO SPLIT button in the EDIT MODE section is lit), you can set independent transition times for video and audio.
- To set the video transition time, press the VIDEO/AUDIO/FADE button in the EFFECT TRANSITION section until only the VIDEO indicator is lit.
- To set the audio transition time, press the VIDEO/AUDIO/FADE button until only the AUDIO indicator is lit.

For more information about split editing, see "Setting Independent Video and Audio IN Points —Split Editing" (page 6-7).

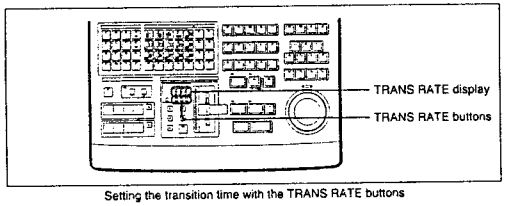
When setting the fade in/fade out transition time

Press the VIDEO/AUDIO/FADE button in the EFFECT TRANSITION section until only the FADE indicator is lit.

For more information about fade in and fade out, see "Editing With Fade In and Fade Out" (page 6-15).

Setting the transition time with the TRANS RATE buttons

The TRANS RATE buttons in the EFFECT TRANSITION section allow you to select any transition time in the range from 0 to 999 frames. The length of one frame is 1/30 seconds (FXE-120) or 1/25 seconds (FXE-120P).

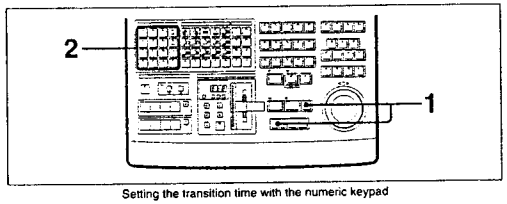


Setting the transition time with the TRANS RATE buttons

- Each time you press a TRANS RATE button, the digit in the display column above the button is incremented by 1. The digit '9' is succeeded by '0'.
- If you press a TRANS RATE button together with the SHIFT button, the display column value is decremented by 1. In this case, the digit '0' is succeeded by '9'.

Setting the transition time with the numeric keypad

You can also enter a transition time with the numeric keypad. Proceed as follows.



Setting the transition time with the numeric keypad

1 Press the SET TRANS (=SHIFT + SET DUR) button in the TIME MARK section.
The unit enters numeric keypad mode, enabling the numeric keys. The number in the TRANS RATE display goes out.

2 After entering the desired number of frames with the numeric keys, press the ENT key.
The transition time is set to the entered value, and the unit exits numeric keypad mode.

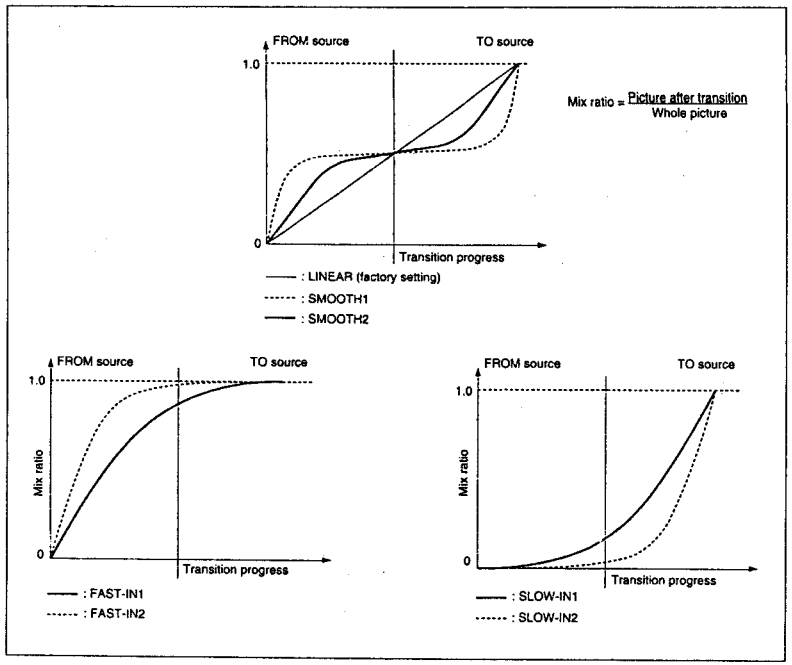
Setting a Transition Path

In a mix transition, the mix ratio of the TO source video with respect to the FROM source video increases gradually as the transition proceeds, finally reaching a ratio of 1.0 when the picture has been completely replaced. In a wipe transition, the area of the TO source video with respect to the area of the FROM source video increases gradually as the transition proceeds, finally reaching a ratio of 1.0 when the picture has been completely replaced.
The type of change that occurs in the mix ratio and area ratio as the transition proceeds is called the "transition path". The factory default transition path is the LINEAR type, but you can also select other transition paths, as shown below.

Transition path types

LINEAR	The picture changes in a linear manner at a constant rate.
SMOOTH1	The period during which the picture is composed of FROM source and TO source video in an equal ratio is considerably longer than normal.
SMOOTH2	The period during which the picture is composed of FROM source and TO source video in an equal ratio is slightly longer than normal.
FAST-IN1	The speed at which the TO source replaces the FROM source is slightly faster than normal.
FAST-IN2	The speed at which the TO source replaces the FROM source is considerably faster than normal.
SLOW-IN1	The speed at which the TO source replaces the FROM source is slightly slower than normal.
SLOW-IN2	The speed at which the TO source replaces the FROM source is considerably slower than normal.
OPTION1	This setting causes slides and other wipes to change in bounds.
OPTION2	A strobe effect is added to the transition. This setting is effective for normal mixes.
OPTION3	A wipe transition from the FROM source to the TO source is repeated 3 times.
OPTION4	A wipe transition from the FROM source to the TO source is repeated 5 times.
OPTION5	A wipe transition from the FROM source to the TO source is repeated, with the wipe pattern expanding and shrinking dramatically. This setting is effective for circle and heart-shaped wipe patterns.
OPTION6	Currently has the same effect as the LINEAR setting.

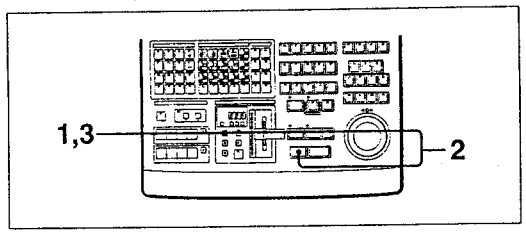
The graphs on the next page show the variations in mix ratio for the LINEAR, SMOOTH1, SMOOTH2, FAST-IN1, FAST-IN2, SLOW-IN1, and SLOW-IN2 transition paths.
The OPTION1 to OPTION5 transition paths are best understood by selecting them and checking the results on a monitor.



Note

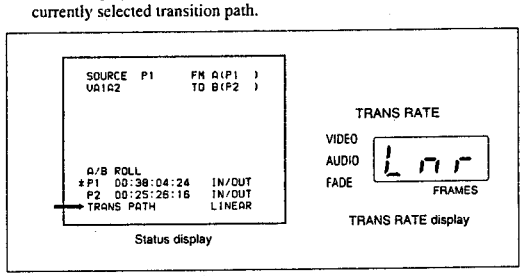
The above graphs were adjusted to show the effects more clearly.

To set a transition path, proceed as follows.



1 Press the TRANS PATH button, turning it on.

The unit enters transition path setting mode. "TRANS PATH" appears in the recorder time data area of the main monitor, showing the currently selected transition path. At the same time, the TRANS RATE display in the EFFECT TRANSITION section also shows the currently selected transition path.



2 While holding the SHIFT button down, press the TRANS PATH button until the desired transition path appears.

The monitor screen and TRANS RATE display change in the following order. Parentheses enclose the indications in the TRANS RATE display.

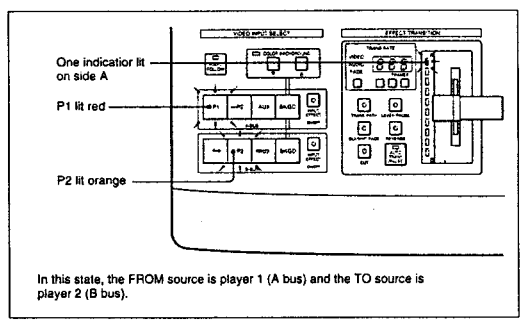
LINEAR (Lnr) → SMOOTH1 (Sh1) → SMOOTH2 (Sh2) → FAST-IN1 (Fi1) → FAST-IN2 (Fi2) → SLOW-IN1 (SL1) → SLOW-IN2 (SL2)
→ OPTION1 (oP1) → OPTION2 (oP2) → OPTION3 (oP3) → OPTION4 (oP4) → OPTION5 (oP5) → OPTION6 (oP6)

3 To leave transition path setting mode, press the TRANS PATH button so that it goes out.

Checking FROM and TO Sources

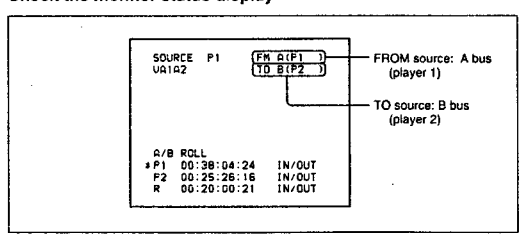
After making the necessary settings, always make a final check of the video signals of the FROM and TO sources before executing a preview or edit.
Check the transition indicators next to the fader lever (normally only one should be lit). Also check the state of the video input selection buttons or the status display on the main monitor.

Check the transition indicators and video input selection buttons



Checking FROM and TO sources on the control panel

Check the monitor status display



Checking FROM and TO sources on the monitor

To reverse the FROM and TO sources

If the FROM and TO sources are reversed, move the fader lever or press the CUT button in the EFFECT TRANSITION section to switch them.

Note

The fader lever is disabled while the AUTO TRANS/PAUSE button is lit. Before using the fader lever to reverse sources, extinguish the AUTO TRANS/PAUSE button.

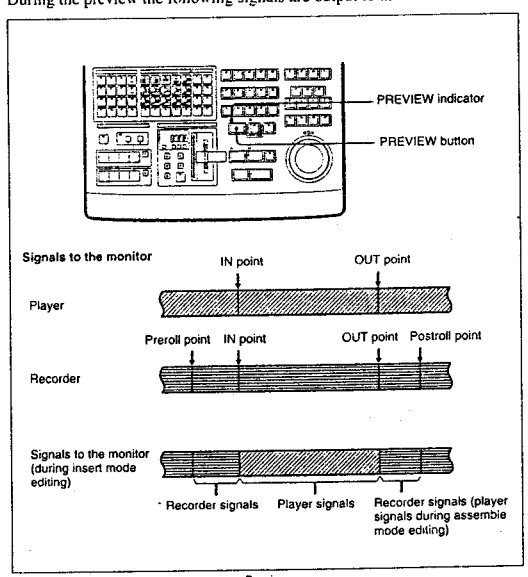
For details, see "Note on the fader lever" (page 4-13).

Preview—The Rehearsal Before Edit Execution

Instead of executing the edit as soon as you finish checking the FROM and TO sources, you can confirm the results of your edit decisions by previewing the edit on a monitor.
In a preview, a monitor connected to the recorder will display the same signals that will be recorded at execution time. You can also view these signals on the main monitor by pressing the SOURCE button in the MONITOR section, turning it on, and then selecting the recorder by pressing the R-VTR button in the SOURCE section.
When you preview the edit, control settings are not registered in the EDL. You can change or correct them as often as necessary.

Carrying out a preview

To preview the edit, press the PREVIEW button in the AUTO CONTROL section.
The PREVIEW indicator above the button lights, and all of the selected VCRs run from their preroll points to their postroll points.
During the preview the following signals are output to the monitor.



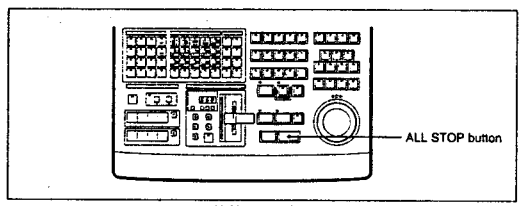
Preview

To preview without using a recorder

After creating an edit, press the PREVIEW button to preview without using a recorder. You can use this button when all you need to do is create the edit data using a player and check the edit results. You can also preview when a recorder is not connected.

To halt a preview

Press the ALL STOP button.
The PREVIEW indicator goes out and all VCRs stop.



Halting a preview

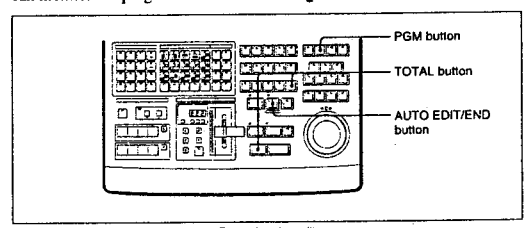
Sync grade display

During a preview, sync grade information is included in the status display.

For details, see "Sync Grade During Previews and Edit Execution" (page 5-72).

Executing the Edit

After checking the FROM and TO sources, execute the edit by pressing the AUTO EDIT/END button in the AUTO CONTROL section.
The AUTO EDIT/END button begins to flash. The specified VCRs are rewound to their preroll points, stop, and then begin to run in the forward direction. When the recorder IN point is reached, the AUTO EDIT/END button lights to indicate that recording has begun.
If you press the PGM button in the MONITOR section, turning it on, you can monitor the program video and audio signals on the main monitor.



Executing the edit

When the edit ends

- The AUTO EDIT/END button goes out and all VCRs stop.
- The edit data is stored in EDL memory. However, if setup menu item 203 SINGLE EDIT MODE is set to EXT DUMP1, EXT DUMP2, or EXT DUMP3, the edit data is output to an external device instead of being saved in EDL memory.

At the same time, the number in the edit number display of the EDIT PGM section is incremented by 1, and the unit is prepared for a new edit.

For more information about edits and EDL memory, see Chapter 7.
For more information about the setup menu, see Chapter 8.

If edit data has not been set correctly

An error code appears in a time counter display as soon as you press the AUTO EDIT/END button. The edit is not executed. Correct the data and repeat the edit.

If a warning sound is heard after edit execution starts

The unit leaves recording mode without registering the edit in the EDL.
Warning sounds are issued in cases such as the following.

- No time code/CTL signals were found on the master tape.
- Connected equipment could not be controlled.
- Time data corresponding to edit settings could not be found on a tape.

To check the total time of edit execution

Press the TOTAL (= SHIFT + CLEAR) button in the AUTO CONTROL section.
The total time appears in the RECORDER time counter display, from the recorder IN point having the smallest time code value of all the recorder IN points registered in the EDL to the recorder OUT point last registered in the EDL.

To halt an edit (without registering it in the EDL)

Press the ALL STOP button.
All VCRs are stopped. The edit number is not incremented.

To halt an edit at a desired scene (and register it in the EDL)

Press the AUTO EDIT/END button, turning it off.
The edit number is incremented, and the master tape time code for the point where the button is pressed is registered as the recorder OUT point.

Sync grade display

During edit execution, sync grade information is included in the status display.

For details, see "Sync Grade During Previews and Edit Execution" (page 5-72).

Automatic settings after edit execution

After an edit is executed, some data items for the next edit are set automatically, as follows.

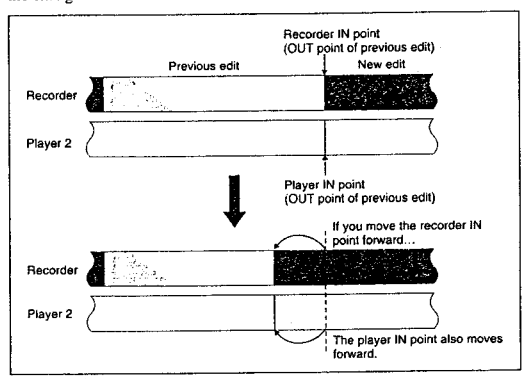
- **Edit mode:** The edit mode selected for the previous edit (and registered in the EDL after execution).
  However, assemble mode is selected after a first edit.
- **Edit type:** The edit type selected for the previous edit.
- **Video switching effect:** The effect selected for the previous edit.
- **Input effect:** Same as previous edit
- **Sources:** As follows, depending on sources selected for previous edit.

Previous edit type (selection button)	Automatically selected source for next edit
Cut (CUT EDIT)	Same source as previous edit
A-roll (A-ROLL)	A-bus source of previous edit
A/B roll (A/B ROLL)	TO source of previous edit
Manual effects (MAN)	
Sync roll (SYNC ROLL)	

- **Edit number:** Number of previous edit plus 1.
- **Recorder IN point:** Recorder OUT point of previous edit.
- **Player IN point:** Player OUT point of previous edit.

About the time track function

When an edit is registered in the EDL, the recorder IN point and player IN point for a new edit are set automatically. If you change the automatically set recorder IN point, the player IN point is automatically adjusted to track the change. This function is called the time track function.



The player affected by the time track function

The time track function affects the player for the new edit, as determined automatically according to the settings for the previous edit. When a player becomes the player affected by the time track function, the player's time counter display panel changes as follows.

- The TIME TRACK indicator flashes.
- A flashing period (.) is displayed at the end of the player's time data.

The recorder time counter display panel

When the edit ends, the recorder time counter display panel also changes as follows.

- The TIME TRACK indicator flashes.
- A flashing period (.) is displayed at the end of the recorder's time data.

If you change the recorder IN point, the flashing TIME TRACK indicator and period go out in the recorder time counter display panel. However, there is no change in the flashing TIME TRACK indicator and period of the affected player until you cancel the time track function for that player.

To cancel the time track function for a player

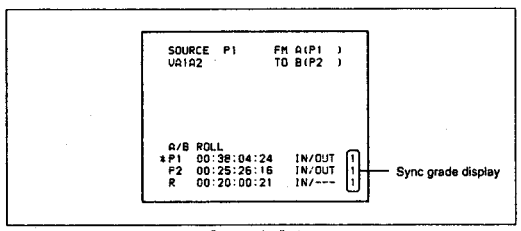
Change the player IN point for the new edit.

Sync Grade During Previews and Edit Execution

During previews and automatic edits, the main monitor status display contains one-digit codes to indicate the degree of synchronizing precision between VCRs.

Note

If you set setup menu item 114 SYNC GRADE DISPLAY to OFF, this information will not be displayed.



Sync grade display

The meanings of the codes are as follows. The sync grade can be selected under item 104 SYNC GRADE in the setup menu.

Sync grade (status display)	Display code number
ACCURATE	1
+/- 1 FRAME	2
ROUGH	3
PREROLL&PLAY	4

For details, see Chapter 8.

If a VCR cannot be synchronized

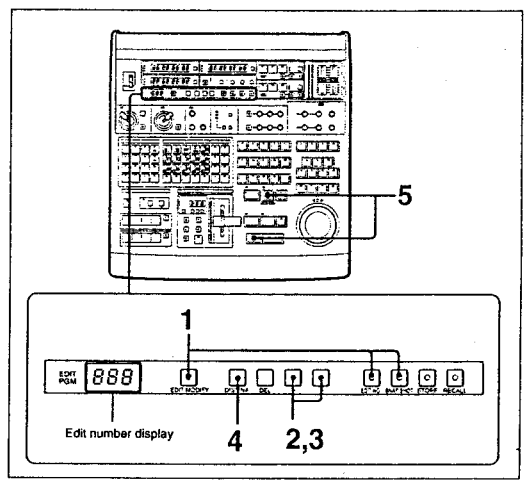
An error code appears in the corresponding time counter display.
In this case, use the setup menu to select a lower sync grade.

Automatic Execution of Multiple Edits —Auto Assembly

Automatic, sequential recording of edits registered in the EDL is called auto assembly. You can designate a given edit as the initial edit, and automatically record edits with higher edit numbers. You can also skip edits which need not be recorded.

For more information about the EDL, see Chapter 7.

To conduct an auto assemble edit, proceed as follows.



Auto assemble edit

1 Press the EDIT MODIFY button in the EDIT PGM section, turning it on.

2 Designate an initial edit by pressing the '+' and '–' buttons until its number appears in the edit number display.
- If you want to record all edits after the initial edit, proceed to step **5**.
- If you want to skip a certain edit, proceed to step **3**.

3 Using the '+' and '–' buttons, display the number of the edit which you want to skip in the edit number display.

4 Press the DIS/ENA button.
The leftmost digit in the edit number display changes to a minus sign (–).[1)]
- To skip more edits, return to step 3.
- If there are no more edits to skip, press the '+' or '–' button until the desired initial edit number appears.

5 Press the AUTO ASM (=SHIFT + AUTO EDIT/END) button in the AUTO CONTROL section.
Recording begins automatically from the initial edit specified in step 2.

To halt auto assembly
Press the AUTO EDIT/END or ALL STOP button.
All VCRs stop, and the unit leaves auto assemble mode without exerting any effect on the edit data.

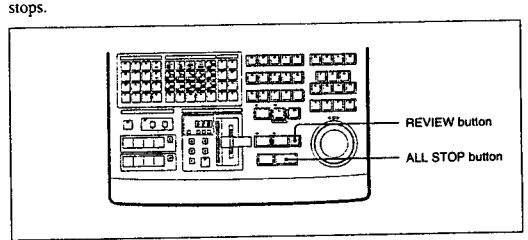
1) The edit remains in the EDL, even if a minus sign is displayed before its edit number. Pressing the DIS/ENA button once more removes the minus sign and cancels the designation.

Reviewing the Edit

After executing the edit, you can conduct a review in order to check the signals which have been recorded on the master tape.
During a review, master tape playback is displayed on the recorder monitor. If you press the SOURCE button in the MONITOR section, turning it on, and select the recorder by pressing the R-VTR button in the SOURCE section, the same signals are displayed on the main monitor.

Conducting a review

To conduct a review, press the REVIEW button in the AUTO CONTROL section, turning it on.
Settings registered in the EDL as a result of edit execution are recalled to the control panel, and the edit is played back from the preroll point to the postroll point.
When the review ends, the recorder is rewound to the OUT point, where it stops.

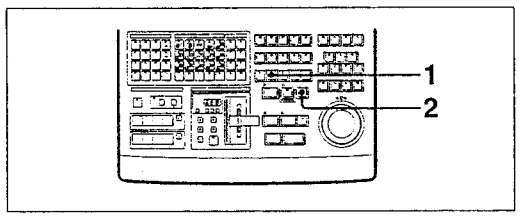


Conducting a review

To stop a review
Press the ALL STOP button.
The REVIEW button goes out, and the recorder stops.

To review near the OUT point only

Instead of reviewing the entire edit, from preroll point to postroll point, you can review only the vicinity of the OUT point.
Proceed as follows.



Reviewing near the OUT point only

1 Press the OUT button in the AUTO CONTROL section, turning it on.

2 Press the REVIEW button.
The most recently registered edit is recalled from the EDL, and the master tape is played back at normal speed near the OUT point only.

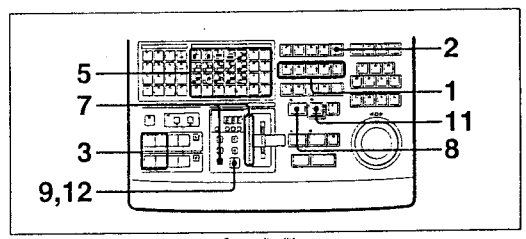
To review effect start points

After pressing the REVIEW button to begin the review, press it once more. The recorder begins fast forward playback, and returns to normal speed at a point slightly before the effect start point only.

On the Fly Editing With Two Players — Sync Roll Editing

In normal A/B roll editing, player 1 is started as the A-bus source, and player 2 started as the B-bus source when player 1 nears its OUT point. In another technique, called sync roll editing, both players are started simultaneously, allowing you to switch manually from bus A to bus B and back again when the desired scenes appear. This can be covenient when, for example, you are editing shots of the same event taken by two cameras from different angles.
To apply dissolves and wipes while switching between buses, use the AUTO TRANS/PAUSE button in the EFFECT TRANSITION section. To cut between the buses, use the CUT button.

The following example shows how to use the AUTO TRANS/PAUSE button.



Sync roll editing

1 Select insert or assemble mode.

2 Press the SYNC ROLL button in the EDIT TYPE section, turning it on.

3 In the VIDEO INPUT SELECT section, select source players for bus A and bus B.

4 Set the edit points *(see page 5-13)*.

5 Select the transition effect using the buttons in the WIPE PATTERN and MIX/EFFECT sections.

6 Set the effect transition time *(see page 5-61)*.

7 Check the FROM and TO sources.
Only one transition indicator should be lit — the topmost indicator on the A side if the transition moves from bus A to bus B, or the lowermost indicator on the B side if it moves in the opposite direction.

(Continued)

8 • To preview the edit while viewing the monitor, press the PREVIEW button and proceed to step **9**.
• To execute the edit without a preview, proceed to step **11**.

9 After passing the edit IN point[1] press the AUTO TRANS/PAUSE button at any scene to begin the effect transition.
You can switch between buses any number of times during the preview.

10 • If you are satisfied with the results of the preview, proceed to step **11**.
• If you are not satisfied, change settings (if necessary) and go back to step **7**.

11 Press the AUTO EDIT/END button to execute the edit.

12 After passing the edit IN point[1], press the AUTO TRANS/PAUSE button to switch buses.
You can switch buses any number of times before reaching the recorder OUT point.
At the recorder OUT point, the edit ends automatically. The edit data for the switches performed is registered in the EDL.

To end a sync roll edit when the recorder OUT point is not set

Press the AUTO EDIT/END or ALL STOP button.
All VCRs stop, and the unit leaves sync roll mode. Depending on the button pressed, time code for the point where the button was pressed may or may not be registered as an OUT point in the EDL.
• If the AUTO EDIT/END button is pressed, an OUT point is registered in the EDL.
• If the ALL STOP button is pressed, an OUT point is not registered in the EDL.

1) Edit IN point: In split editing, either the video IN point or the audio IN point, whichever comes later.

Editing With Manual Special Effects

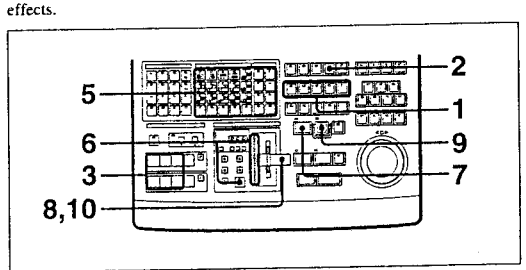
By using the fader lever to carry out dissolves and wipes manually, you can vary the transition speed, stop midway through the transition, and achieve other special effects. You can also use the fader lever, AUTO TRANS/PAUSE button and CUT button to switch between buses any number of times.
Effects created in this way are not registered in the EDL, even if you execute an edit.

Note

Instead of using the fader lever, you can also use the AUTO TRANS/PAUSE button or the CUT button, which switches instantly between A-bus and B-bus signals.

For details on using the AUTO TRANS/PAUSE button, see "Auto Transition Effects" (page 6-5).

The following example shows how to use the fader lever to create special effects.



Using the fader lever for special effects

1 Select insert or assemble mode.

2 Press the MAN button in the EDIT TYPE section, turning it on.

3 In the VIDEO INPUT SELECT section, select source players for bus A and bus B.

4 Set the edit points *(see page 5-13)*.

5 Select the transition effect using the buttons in the WIPE PATTERN and MIX/EFFECT sections.

6 Check the FROM and TO sources.
Only one transition indicator should be lit — the topmost indicator on the A side if the transition moves from bus A to bus B, or the lowermost indicator on the B side if it moves in the opposite direction.

(Continued)

7 • To rehearse the transition while viewing playback on the monitor, press the PREVIEW button and proceed to step **8**.
• If a preview is not necessary, proceed to step **9**.

8 A preview starts as soon as you press the PREVIEW button. When it reaches the edit IN point[1] manipulate the fader lever and observe the changes in the picture.
You can switch between the sources any number of times before reaching the recorder OUT point.
• If satisfied with the results of the preview, check the FROM and TO sources and proceed to step **9**.
• To redo the preview, make the necessary adjustments and return to step **6**.

9 Press the AUTO EDIT/END button to execute the edit.

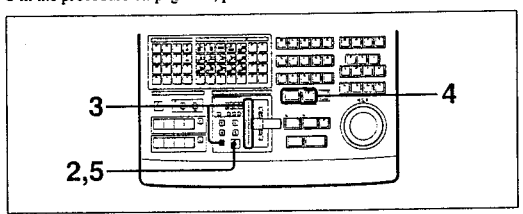
10 Use the fader lever to switch between buses at the desired scenes. You can switch any number of times before reaching the recorder OUT point.

To end a manual effects edit when the recorder OUT point is not set
Press the AUTO EDIT/END or ALL STOP button.
All VCRs stop, and the unit leaves manual effects mode.
• If the AUTO EDIT/END button is pressed, the edit data (except for the effect type and transition time) is registered in the EDL.
• If the ALL STOP button is pressed, nothing is registered in the EDL.

1) Edit IN point: In split editing, either the video IN point or the audio IN point, whichever comes later.

Auto Transition Effects

Instead of using the fader lever, you can also use the AUTO TRANS/PAUSE button for manual transition effects. After carrying out steps **1** to **5** in the procedure on page 6-3, proceed as follows.



Creating effects in auto transition mode

1 Set the effect transition time *(see page 5-61)*.

2 If the AUTO TRANS/PAUSE button is not lit, press it, turning it on.

3 Check the FROM and TO sources.
Only one transition indicator should be lit, on the A or B side.

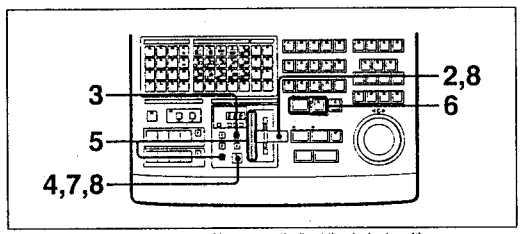
4 Press the PREVIEW or AUTO EDIT/END button to put the unit into preview or edit execution mode.

5 After passing the edit IN point, press the lit AUTO TRANS/PAUSE button.
The auto transition begins, switching from one bus to the other. You can switch between buses any number of times before reaching the recorder OUT point.

To suspend an auto transition
After starting the transition by pressing the AUTO TRANS/PAUSE button, press it again at the desired position. The button changes from lit to flashing.
To resume the transition, press the AUTO TRANS/PAUSE button once more. The button changes from flashing to lit.

To stop an auto transition automatically at the desired position

By manipulating the fader lever, you can decide the position where you want to halt an auto transition. After carrying out steps **1** to **5** on page 6-3, proceed as follows.



Stopping an auto transition automatically at the desired position

1 Set the effect transition time *(see page 5-61)*.

2 Move the fader lever to the position at which you wish to stop.

3 Press the LEVER PAUSE button, turning it on.

4 If the AUTO TRANS/PAUSE button is not lit, press it, turning it on.

5 Check the FROM and TO sources.
Only one transition indicator should be lit, on the A or B side.

6 Press the PREVIEW or AUTO EDIT/END button to put the unit into preview or edit execution mode.

7 After passing the edit IN point, press the lit AUTO TRANS/PAUSE button.
The auto transition begins, and stops automatically at the fader lever position. The AUTO TRANS/PAUSE button starts flashing.

8 To resume the transition, press the AUTO TRANS/PAUSE button again or move the fader lever.
If you move the fader lever, the unit leaves auto transition mode.

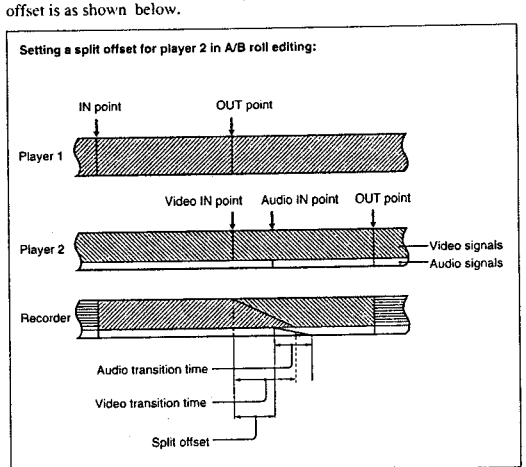
Setting Independent Video and Audio IN Points— Split Editing

Editing with independent video and audio IN points is called split editing. You can set split offsets separately for all the connected VCRs (player 1, player 2, and recorder).

The following restrictions apply in split editing.
- You must select insert mode as the edit mode to perform split editing. Moreover, it is not possible to set different split offsets for audio channels 1 and 2. The split offset is always the same for channel 1 and channel 2.
- The maximum split offset between the video IN point and the audio IN point is:
  59 seconds and 29 frames (FXE-120) or
  59 seconds and 24 frames (FXE-120P).
- Independent OUT points cannot be set for audio and video.
- If you set split offsets for the players and the recorder, the recorder split offset takes priority.

Relationship between transition times and split offset

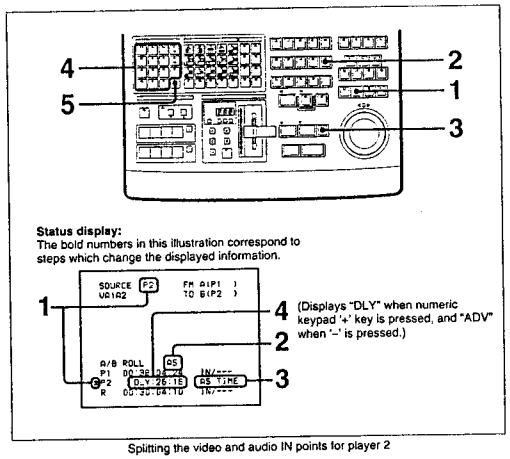
In split editing, you can set separate transition times for audio and video. In this case, the relationship between the transition times and the split offset is as shown below.



Relationship between transition times and split offset

Setting the split offset

The audio IN point is calculated automatically, using the video IN point and the split offset.
For example, the procedure below shows how to set a split offset for player 2 when the following settings have been made.
- **Insert edit channels:** Video, audio 1, audio 2
- **Edit type:** A/B roll



Splitting the video and audio IN points for player 2

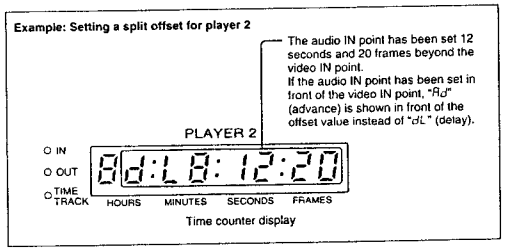
1 In the SOURCE section, select the VCR for which you want to split the audio and video IN points (in this example, player 2).

2 Press the AUDIO SPLIT button in the EDIT MODE section.
The button begins to flash and the unit enters split edit mode.

3 Press the SET DUR button in the TIME MARK section.
The button begins to flash and the numeric keypad is enabled.

4 Enter the split offset (seconds:frames) using the numeric keypad.
Press the '+' key to set the audio IN point beyond the video IN point, and the '–' key to set it in front of the video IN point. You can enter up to 4 digits.
If the most significant digits are "0", they do not need to be entered again.

5 Press the ENT key in the numeric keypad.
The value entered in step **4** is confirmed as the split offset, and the unit leaves numeric keypad mode.
The split offset is shown in the appropriate time counter display, as follows.



To display the split offset
You can display the split offset at any time by selecting the VCR in the SOURCE section, and then pressing the SPLIT (=SHIFT + AUDIO SPLIT) button in the EDIT MODE section. The split offset is displayed in the main monitor's status display, and in the time counter display of the selected VCR.

To change the split offset
To change the split offset, put the unit into split mode, press the SET DUR button in the TIME MARK section and enter the new offset with the keys in the numeric keypad. In this case, the '+' and '–' keys are used to specify "DLY" and "ADV", respectively. They do not increment or decrement the numeric value.

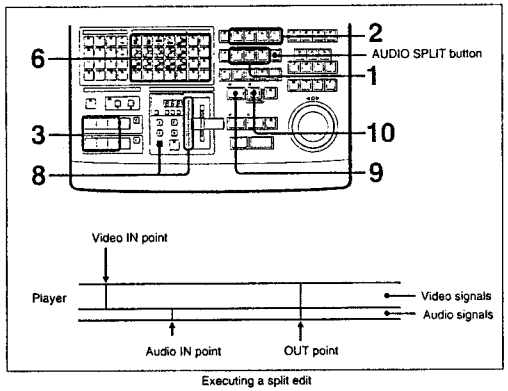
To cancel a split offset
Display the split offset, then press the CLEAR button in the AUTO CONTROL section.

To set the video IN point while the AUDIO SPLIT button is flashing
You can set video edit points in the normal way, by pressing the MARK IN and MARK OUT buttons (but not the SET DUR button) in the TIME MARK section.

To exit split edit mode
Press the flashing AUDIO SPLIT button, turning it off.

Executing a split edit

The following example shows how to execute a split edit using player signals on either the A bus or B bus.



Executing a split edit

1 Select insert mode in the EDIT MODE section by pressing insert buttons (V, A1, A2) for the desired channels, turning them on. If a button is flashing, press it twice.

2 Select the edit type in the EDIT TYPE section.

3 In the VIDEO INPUT SELECT section, select the source.

4 Set the edit points *(see page 5-13)*.

5 Set the split offset between the audio IN point and the video IN point for the selected player, on either the A bus or the B bus.

For details, see "Setting the split offset" (page 6-8).

6 Select the transition effect using the buttons in the WIPE PATTERN and MIX/EFFECT sections.

7 Set the effect transition time *(see page 5-61)*.

8 Check the FROM and TO sources.

9 Preview the edit and change the settings as necessary.
When you press the PREVIEW button, the AUDIO SPLIT button stops flashing and lights.

10 Execute the edit.
The AUDIO SPLIT button stops flashing and lights when you press the AUTO EDIT/END button, and goes out when the edit ends.

Note

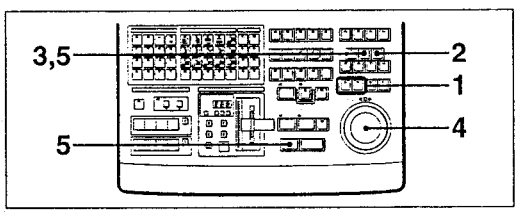
When a split edit is executed, the split offset is saved in EDL memory as part of the information relating to that edit. However, it is not carried over to new edits.

Editing Variable-Speed Playback—DMC Editing

If your player VCR supports Dynamic Tracking (DT) playback, you can edit noiseless, variable-speed video playback. This kind of editing is called Dynamic Motion Control (DMC). In DMC editing, it is necessary to set the initial playback speed, or speed of the player at the point where it crosses the IN point.

Setting the initial speed for DT playback

Proceed as follows to set the initial speed for DT playback.



Setting the initial speed for DT playback

1 Select the DT player using the buttons in the SOURCE section.

2 Press the DMC button in the MANUAL CONTROL section, turning it on.
The specified player enters DMC mode.

3 Press the SPEED button in the MANUAL CONTROL section.
The value "+100" is displayed in the status display of the main monitor and the value "100" in the time counter display. (These values represent normal speed of DT playback.)
If an initial speed of DT playback has already been set, its value will be displayed instead of "+100" and "100".

4 Rotate the search dial to control the playback speed. Stop rotating the dial when playback reaches the desired speed.
A DT playback speed corresponding to the current dial position is displayed.

Note

This unit can control DT playback at speeds ranging from –1 to +3 times normal speed. However, the actual speeds produced may vary, depending on the particular VCR.

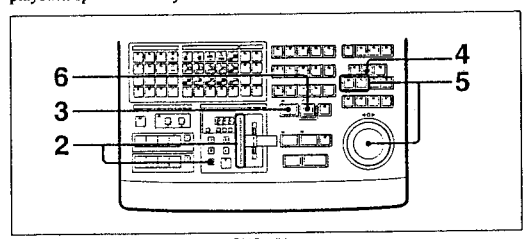
5 Press the MK-SPD (=SHIFT + SPEED) button in the MANUAL CONTROL section.
The speed of DT playback at the time when you pressed the button is stored in the unit's memory.

To cancel DMC mode

Press the lit DMC button, turning it off.

Performing a DMC edit

To perform a DMC edit, first initialize the DT playback speed, then proceed as follows.
After a preview or edit passes the IN point, you can control the DT playback speed manually.



DMC editing

1 Follow the standard procedures to select the edit mode and so on.

2 Check the FROM and TO sources.

3 If you want to preview the edit first, press the PREVIEW button.
The button lights and a preview begins. When a player programmed for DT playback reaches the IN point, the DMC button begins flashing, and DT playback begins at the specified initial speed.
If you also want to control the playback speed during the preview, proceed to step **4**.
If you do not want to control the playback speed, wait for the preview to finish and then proceed to step **6**.

4 To make DT playback speeds be displayed, press the SPEED button in the MANUAL CONTROL section.
The set initial speed of DT playback is displayed in the status display of the main monitor and the time counter display.

5 To control the playback speed manually, rotate the search dial.
Alternatively, you can use the PLAY and STILL buttons in the MANUAL CONTROL section.
The current DT playback speed is displayed.

(Continued)

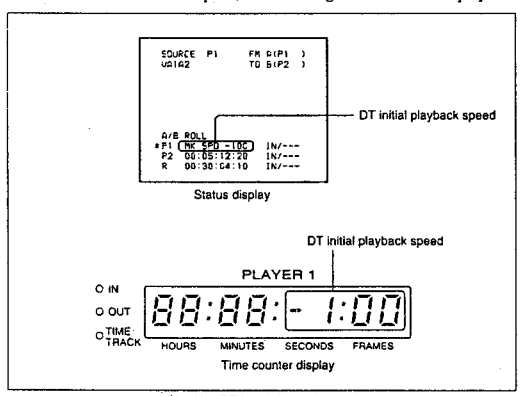
6 Press the AUTO EDIT/END button to execute the edit.
Just as during a preview, you can use the search dial and PLAY button to control playback speed beyond the IN point, and press the STILL button for still playback.
Note that manually controlled playback speeds are not saved in the EDL, although the DT initial speed is saved.

To change the initial speed during a preview

After selecting the desired speed in step **5**, press the SPEED button to display the current DT playback speed and then press the MK-SPD (=SHIFT + SPEED) button.

To check the DT initial playback speed

Select the player with the appropriate button in the SOURCE section, then press the SPEED button in the MANUAL CONTROL section, turning it on. The DT initial playback speed is displayed in the main monitor's status display and in the appropriate time counter display as a percentage of normal speed. For example, if the initial speed for player 1 on bus A has been set to –1 times normal speed, the following information is displayed.



Checking DT initial playback speed

Automatic calculation of edit points when a DT initial speed is set

Even if you have set a DT initial playback speed, the unit calculates edit points and durations in the same way as in normal editing, regardless of the initial speed.

For details about automatic calculation of edit points and durations, see "Relation Between IN/OUT Points and Duration" (page 5-18).

Editing With Fade In and Fade Out

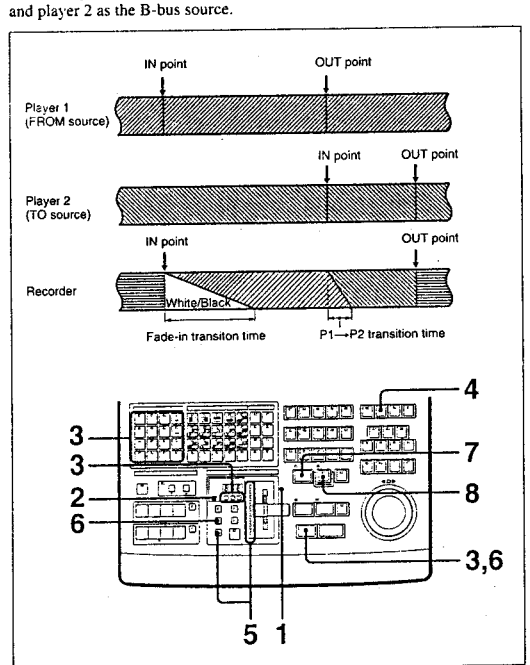
You can fade player video in to or out from a black or white background. The black or white background is output from the TO source bus.

Note

- The fade-in and fade-out effects cannot be used when any of the key selection buttons (LUMINA KEY, CHROMA KEY, P IN P) are lit.
- The fader lever cannot be used for fade-in or fade-out effects.
- Fade-in from the edit IN point cannot be used during sync roll editing.
- If you perform a fade-in during A-roll editing, the black or white background is output on bus B, overriding the A-roll effect.

Fade In

Proceed as follows to use the fade-in effect in normal A/B roll editing. This example assumes that player 1 has been selected as the A-bus source, and player 2 as the B-bus source.



Fade-in A/B roll editing

1 Push the fader lever all the way up to the A side, so that only the topmost transition indicator is lit.

2 Press the VIDEO/AUDIO/FADE button in the EFFECT TRANSITION section, lighting the FADE indicator above the button.

The fade transition time may now be set.

3 Set the fade transition time using the TRANS RATE buttons in the EFFECT TRANSITION section, or the SET TRANS (=SHIFT + SET DUR) in the TIME MARK section button *(see page 5-62)*.

Note

The fade transition time must be shorter than the duration for player 1. If it is not shorter, an error code is displayed in the appropriate time counter display when you press the PREVIEW or AUTO EDIT/END button, and the preview or edit is not executed. The edit is executed if the fade transition time and player 1 duration are equal.

4 Press the PGM button in the MONITOR section.

The main monitor displays still playback from player 1.

5 Check the FROM and TO sources.

6 To fade the playback of player 1 in from a white background, press the BLK/WHT FADE button in the EFFECT TRANSITION section while holding down the SHIFT button. Press the BLK/WHT FADE button alone to fade in from a black background.

The BLK/WHT FADE button lights. At the same time, the BKGD button in the B-BUS row (the TO source row) of the VIDEO INPUT SELECT section lights automatically.
The picture changes gradually to a white or black background, using the transition time set in step **3**. When the transition is complete, the lit BLK/WHT FADE button begins to flash.

7 Preview the edit and change the settings as necessary.

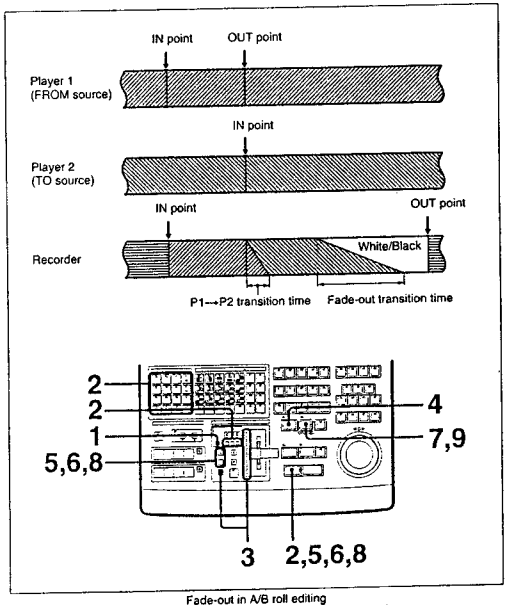
When the fade-in preview finishes (the white or black background is completely replaced by the playback of player 1), the flashing BLK/WHT FADE button goes out.

8 Execute the edit.

During the edit, the flashing BLK/WHT FADE button goes out at the end of the fade-in transition.

Fade Out

You can perform a fade out in A/B roll editing at any point after the transition from the FROM source to the TO source. The following example shows how to fade the TO source playback out to a black or white background after an A/B roll transition.
Make the normal edit point settings for an A/B roll edit (but do not set the OUT point for the TO source), then proceed as follows. This example assumes that player 1 has been selected as the A-bus source, and player 2 as the B-bus source.



Fade-out in A/B roll editing

1 Press the VIDEO/AUDIO/FADE button in the EFFECT TRANSITION section, lighting the FADE indicator above the button.

The fade transition time may now be set.

2 Set the fade transition time using the TRANS RATE buttons in the EFFECT TRANSITION section, or the SET TRANS (=SHIFT + SET DUR) button in the TIME MARK section *(see page 5-62)*.

3 Check the FROM and TO sources.

4 • If you want to preview the edit, press the PREVIEW button and proceed to step **5**.
• To execute the edit without a preview, proceed to step **7**.

5 After the preview starts, wait until the picture changes completely to the playback of player 2 (the TO source), then press the BLK/WHT FADE button in the EFFECT TRANSITION section at the desired scene to fade out to black, or press the BLK/WHT FADE button while holding down the SHIFT button to fade out to white.

The BLK/WHT FADE button lights. At the end of the fade-out transition, when player 2 playback has been completely replaced by the background, the lit BLK/WHT FADE button starts flashing.
• If satisfied with the preview, proceed to step **7**.
• If not satisfied, make the necessary changes and redo the preview.

6 Press the flashing BLK/WHT FADE button alone or press it while holding down the SHIFT button so that it goes out.

The unit leaves fade mode.

7 Press the AUTO EDIT/END button to execute the edit.

8 After the picture changes completely to the playback of player 2 (the TO source), then press the BLK/WHT FADE button in the EFFECT TRANSITION section at the desired scene to fade out to black, or press the BLK/WHT FADE button while holding down the SHIFT button to fade out to white.

The BKGD button in the B-BUS row of the VIDEO INPUT SELECT section lights automatically.
When the fade out is complete (player 2 video is completely replaced by a black or white background), the lit BLK/WHT FADE button begins to flash.

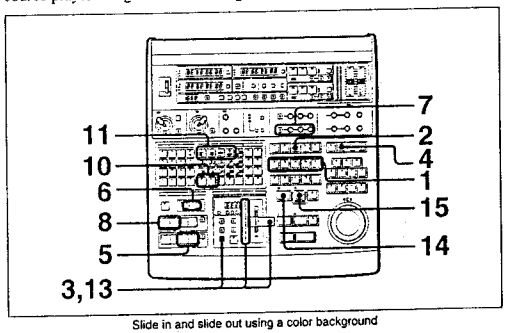
9 Press the AUTO EDIT/END button to end the edit.

Using Color Backgrounds

The unit's internal color background generator can be used to generate effective backgrounds for use with mixes, wipes and so on.
This section shows how to slide player video into a color background, and how to switch to a color background by sliding player video out.

Slide In and Slide Out Using a Color Background

The following example shows how to slide in or slide out video from a source player using a selected background color.



Slide in and slide out using a color background

1 Select the edit mode in the EDIT MODE section.

2 Press the A/B ROLL button in the EDIT TYPE section, turning it on.

3 Select the B bus by pressing the CUT button in the EFFECT TRANSITION section, or by pulling the fader lever all the way down to the B side. Check to be sure that only the lowermost transition indicator on the B side is lit.

4 Press the PGM button in the MONITOR section, turning it on.

5 In the VIDEO INPUT SELECT section, press the AUX and BKGD buttons in the B-BUS row, turning them on, to select the built-in color background generator as the source for bus B.
The COLOR BACKGROUND indicator lights, and a background color is output to the monitor.

(Continued)

6 Use the background color selection buttons (▼ and ▲) to select one of the 25 background colors.

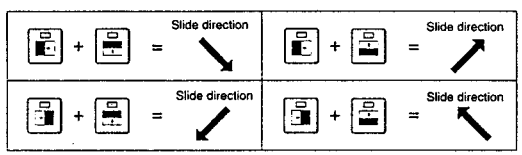
7 Adjust the hue, luminance and chrominance of the background color by pressing the B-BUS button in the VIDEO LEVEL & HUE section and then rotating the three knobs.

8 Press the P1 or P2 button in the A-BUS row of the VIDEO INPUT SELECT section, turning it on, to select player 1 or player 2 as the source for bus A.

9 Set the edit points *(see page 5-13)*.
For bus B, enter a duration by pressing the AUX button in the SOURCE section, turning it on, and then pressing the SET DUR button and using the numeric keypad.

10 Press the SLIDE IN button in the WIPE PATTERN section to select a slide in effect. Press the SLIDE OUT button to select slide out.

11 Use the horizontal and vertical wipe buttons to set the direction.
To slide in at a slant, press one each of the horizontal and vertical wipe buttons, turning them on.



12 Set the slide-in or slide-out transition time *(see page 5-61)*.

13 Check the FROM and TO sources.
- For a slide in, only the lowermost transition indicator on side B should be lit.
- For a slide out, only the topmost transition indicator on side A should be lit.

If other indicators are lit, press the CUT button in the EFFECT TRANSITION section to switch buses.

14 Preview the edit and change the settings as necessary.

15 Execute the edit.

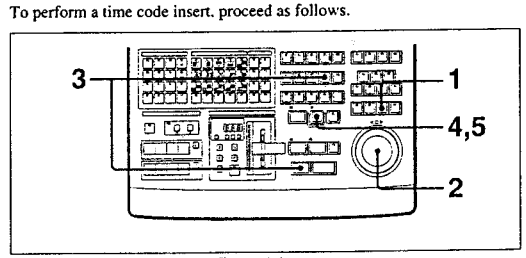
Recording Time Code—Time Code Insert

To perform time code editing[1] with a tape containing recorded video or audio but no recorded time code, it is necessary to record consecutive time code on the tape in advance, at least for the segment you wish to edit. Adding time code to a pre-recorded tape in this way is called time code insert.
Even if time code is already recorded on the tape, you may want to change the time code values. This is also done by executing a time code insert with the desired preset value. If you do not set a preset value, time code will be inserted so as to form a continuous sequence with the time code already recorded on the tape.

Note

- Time code cannot be recorded correctly on a tape or a section of tape on which nothing at all has been recorded.
- When inserting time code into an already recorded tape, the tape should normally be loaded into the recorder VCR. This prevents misoperations such as selecting a player VCR containing a tape with time code that should not be overwritten.
- Time code insert cannot be done for a tape set in a VCR connected over the LANC interface.

To perform a time code insert, proceed as follows.



Time code insert

1 Insert the tape onto which you want to record time code into a VCR (normally the recorder), and select that VCR in the SOURCE section.

(Continued)

1) Time code editing: Editing which uses time code to determine edit point locations, as opposed to editing which uses CTL codes.

2 Using the search dial, search for the desired scene (the time code insert IN point).
If time code is recorded before the IN point, and you want to insert time code so as to form a continuous sequence, rewind the tape to the section containing the already recorded time code.

Note

Before recording time code, check to be sure that signals have already been recorded on the tape, at least between the preroll point and the IN point.

3 Press the TC (=SHIFT + A2) button in the EDIT MODE section.

4 Press the AUTO EDIT/END button in the AUTO CONTROL section.
The button begins to flash, and the tape is rewound from the IN point to the preroll point. It stops there, and begins to run in the forward direction. Time code recording begins when the tape nears the IN point. When the IN point is passed, the AUTO EDIT/END button stops flashing and lights.
During time code recording, the monitor displays the recorded video.

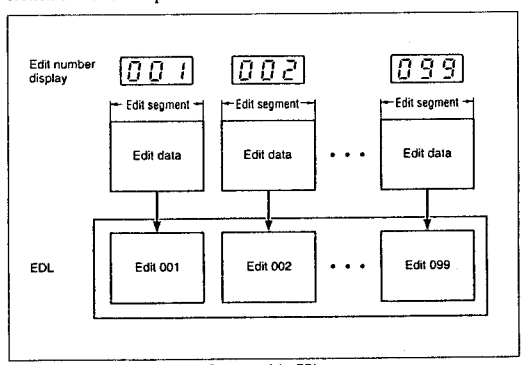
5 Press the AUTO EDIT/END button at the point where you wish to end the time code recording.

To preset the time code for an IN point

Preset the time code for an IN point just as you would set an edit point, by pressing the MARK IN button in the TIME MARK section, or by pressing the SET IN (=SHIFT + MARK IN) button and entering the time code value with the numeric keypad.

About the EDL

The edit decision list (EDL) is stored in the unit's internal memory. As shown below, it contains a list of edits numbered from 001 to 099. Each edit contains all of the settings needed to carry out an automatic edit. Edits are registered in the EDL automatically every time you execute an edit. You can recall a registered edit whenever you need it again, revise the recalled edit and save the revised version. The current edit is displayed as a three-digit number in the edit number display, located in the EDIT PGM section of the control panel.



Structure of the EDL

About new edits

When you execute an edit by pressing the AUTO EDIT/END button, the number shown in the edit number display is incremented and the unit is readied for a new edit. When displaying a new edit number, "n" is shown in the leftmost column of the edit number display.

Edit number display format

The edit number is displayed in the following format.

EDIT PGM 003	Registered edits are displayed as three-digit numbers.
EDIT PGM n04	New edits, and edits deleted from the EDL, are displayed as two-digit numbers preceded by "n" (new). *See page 7-10 for more information about deleted edits.*
EDIT PGM -02	While the EDIT MODIFY button is lit, skipped edits are displayed as two-digit numbers preceded by a minus sign (–). *See page 7-4 for more information about skipped edits.*

When the EDL becomes full

When n99 is displayed in the edit number display, it means that you have already registered 98 edits and that the EDL is almost full. After you register edit n99, the number in the display changes as follows, depending upon the the setting of item 201 OVERFLOWED EDIT in the setup menu.

If item 201 is set to INHIBITED: The number changes from n99 to 099. In this state, the AUTO EDIT/END button is disabled and no new edits can be registered. If you do press the AUTO EDIT/END button, an error code is displayed in the time counter display.
Setup menu item 201 is factory preset to INHIBITED.

If item 201 is set to OVERWRITE: The number changes to 001. In this state, when you press the AUTO EDIT/END button, the edit previously registered under number 001 is overwritten and the display changes to 002.

To delete all registered edits, set item 201 OVERFLOWED EDIT in the setup menu to ALL CLEAN UP.

For details, see Chapter 8.

Edit settings stored in the EDL

The following edit settings are stored in the EDL.

- The edit type
- The edit mode
- The video sources (as selected with the buttons in the A-BUS and B-BUS rows of the VIDEO INPUT SELECT section)
- The edit points (IN and OUT points for each VCR)
- The split offset (when split editing is selected)
- The wipe pattern
- The mix type
- The key type
- The transition time
- The FROM source and TO source

For details regarding the EDL output format, see page 7-17.

About Snapshots

When the unit saves an edit, it can also save the settings of the controls in the AUDIO INPUT SELECT section and the video switcher/special effects section. This data is called a snapshot. Whenever you recall a snapshot from memory, controls in these sections are instantly restored to their settings at the time when the snapshot was taken.
The following data are stored in snapshots.

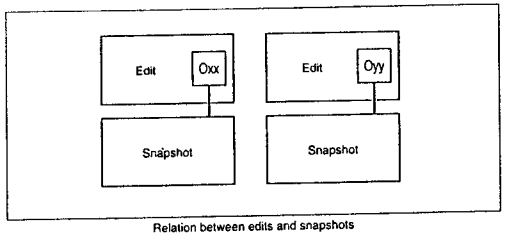
- Input effect selections

Note
Settings of the '+' and '–' keys in the INPUT EFFECT section may not be restored correctly.

- Whether the input effect functions are on or off
- Fade settings
- The fade transition time
- Whether the AUTO TRANS/PAUSE button is on or off
- The background color
- Whether the lever pause function is on or off
- Whether the audio follow function is on or off
- Whether video adjustment is on or off (the settings of the A-BUS and B-BUS buttons in the VIDEO LEVEL & HUE (FXE-120) or VIDEO LEVEL & CHROMA PHASE (FXE-120P) section)
- Pattern edge settings (in the the PATTERN EDGE section, whether the SOFT, OFF and BORDER indicators are on or off, and the settings of the COLOR and WIDTH buttons)
- Whether the pattern position function is on or off
- Whether the color compensation recall function is on or off
- The color compensation state stored in memory

Snapshot numbers

Snapshots are managed using the same numbers as edits. In other words, the same number is shared by one edit and one snapshot.

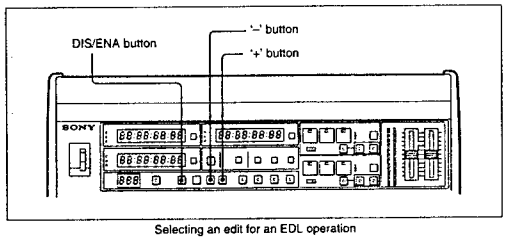


Relation between edits and snapshots

Using the EDL

Before performing edit operations such as registration, recall or revision, press the EDIT MODIFY button, turning it on.

Selecting an edit for an EDL operation



Selecting an edit for an EDL operation

Except when registering a new edit, you will always need to select the edit to work with in an EDL operation.
To select an edit, press the '+' and '–' buttons in the EDIT PGM section until the number of the edit you wish to use appears in the edit number display.

'+' button: The displayed number is incremented by 1 each time you press the button (unless 99 edits have been registered, in which case it changes to 001). Holding this button down increments the displayed number continuously.

'–' button: The displayed number is decremented by 1 each time you press the button. If the number is 001, it changes to the new edit number (unless 99 edits have beeen registered, in which case it changes to 099). Holding this button down decrements the displayed number continuously.

Note

The EDIT NO. button lights if an edit has been registered for the displayed number, and goes out if not.
The SNAPSHOT button lights if a snapshot has been registered, and goes out if not.

To skip edits during an EDL operation

When you perform an auto assembly operation involving multiple edits, or when you transfer data to and from the EDL, you can exclude specific edits from the operation.
To skip a specific edit, select that edit and press the DIS/ENA button.
The leftmost digit in the edit number display changes from '0' to a minus sign (–).
To undo the skip designation, press the DIS/ENA button once more. Note that the edit remains in EDL memory even if a minus sign is shown before its edit number.

About the state of the unit after an edit operation

When an edit operation ends, and you press the lit EDIT MODIFY button to extinguish it, the number of a new edit appears in the edit number display of the EDIT PGM section. However, no other changes occur in the state of the control panel.
Whether the EDIT MODIFY button is lit or not, you can use setup menu item 205 SET LAST EDIT POINTS to put the whole control panel into the same state as after execution of the newest edit among the registered edits.

Registering an Edit in the EDL

After you set the edit data (create an edit) and press the AUTO EDIT/END button in the AUTO CONTROL section to execute it, the edit is stored automatically in EDL memory. However, if setup menu item 203 SINGLE EDIT MODE is set to EXT DUMP1, EXT DUMP2, or EXT DUMP3, the edit data is output to an external device instead of being saved in EDL memory.

Notes

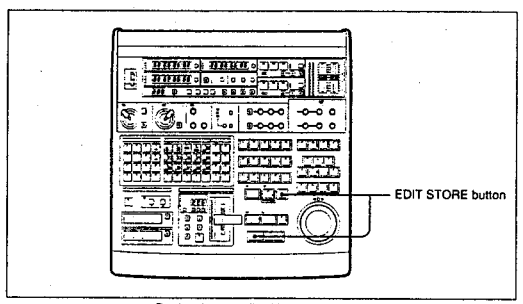
- You cannot register edits only, or snapshots only.
- If you recall an edit only and perform a registration operation, the control panel's current snapshot function data is stored at the same time.

How long are edits held in internal memory?

Edits remain in internal memory for about one week after you turn the unit's power off. If you want to save edits permanently, transfer them to a personal computer or other external equipment.

For more information see "Transfering Edits To and From External Equipment" (page 7-14).

To register an edit without executing it



Registering an edit without executing it

Note

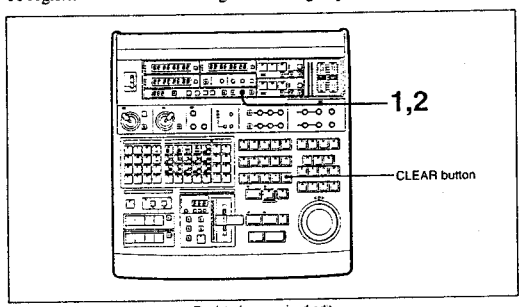
This operation requires that the EDIT MODIFY button in the EDIT PGM section be in the off state. If on, press the button, turning it off.

After creating an edit, press the EDIT STORE (= SHIFT + REVIEW) button.
The edit is registered, and the unit enters the same state as the state after you press the AUTO EDIT/END button to execute an edit.

For more information about the state of the unit after edit execution, see "Automatic settings after edit execution" (page 5-70).

To register a revised edit

To register an edit after recalling and revising it, proceed as follows.



Registering a revised edit

1 Press the STORE button in the EDIT PGM section, making it flash. To cancel an edit store operation, press the CLEAR button in the AUTO CONTROL section.

2 Press the STORE button again.

The edit is registered and the flashing STORE button goes out.

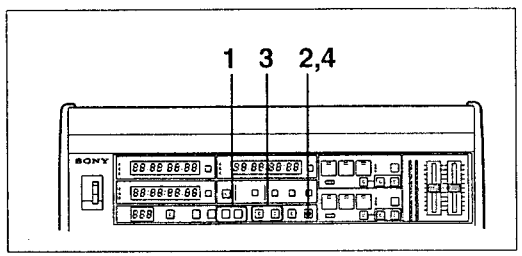
About overwriting stored edits

If you perform the following operations when a number other than a new edit number is displayed in the edit number display, the edit formerly stored under that number is overwritten. (In this case, the number in the edit number display is not incremented.)

- Press the AUTO EDIT/END button to execute an edit when the EDIT MODIFY button is lit.
- Register an edit by pressing the STORE button.

Recalling Edits From the EDL

You can recall edits snapshots from memory in order to return the control panel to the state it was in at the time the edit/snapshot was saved. Proceed as follows.



Recalling an edit

1 Press the '+' and '–' buttons to select the edit.

2 Press the RECALL button, making it flash.
The unit enters edit/snapshot recall mode.
To cancel the recall operation, press the CLEAR button in the AUTO CONTROL section.

3 • To recall the edit alone, press the SNAPSHOT button, turning it off.
• To recall the snapshot alone, press the EDIT NO. button, turning it off.

4 Press the RECALL button once more.
The various buttons on the control panel light or go out, according to the settings contained in the selected edit/snapshot.

Note

Note the following point when recalling an edit only.
Any input effect settings which you may have made on the control panel are canceled at the time when you recall the edit if they are not compatible with the wipe patterns, mix patterns or key types contained in the edit data.

Revising and Deleting Edits

To revise an edit

To revise an edit, first recall it from the EDL, then use the normal procedures to adjust the settings.

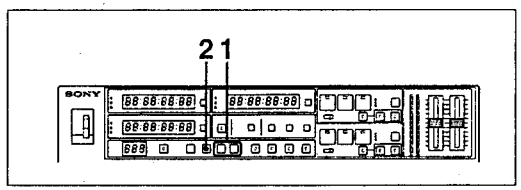
For more information about how to adjust the settings, see the following sections:
- **Edit modes:** Selecting an Edit Mode *(page 5-2)*.
- **Sources:** Selecting Video and Audio Signals *(page 4-6)*.
- **Edit points:** Changing edit points *(page 5-22)*.
- **Special effects:** Selecting Special Effects *(page 5-26)*.
- **Transition times:** Setting the Transition Time *(page 5-61)*.

To save an edit after recalling and revising it
Press the AUTO EDIT/END button to execute an automatic edit, or press the STORE button.

To undo changes after previewing a recalled edit
Press the LAST ED (= SHIFT + GO TO) button in the AUTO CONTROL section.

To delete an edit

When you have no more use for an edit, proceed as follows to delete it from the EDL.



Deleting an edit

1 Press the '+' and '–' buttons to select the edit.

2 Press the DEL button.
The edit is deleted from the EDL and "n" appears in the leftmost column of the edit number display.

Note

Deletions are permanent. Deleted edits cannot be restored.

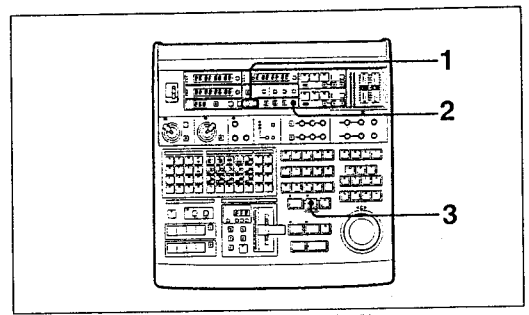
To delete all of the edits registered in the EDL

Under setup menu item 201 OVERFLOWED EDIT, select ALL CLEAN UP.

For details, see Chapter 8.

Using Registered Edits in Automatic Editing

Proceed as follows to use an edit from the EDL in automatic editing.



Using a registered edit in automatic editing

1 Press the '+' and '–' buttons to select the edit.

2 Press the RECALL button to recall the specified edit to the control panel.

3 Press the AUTO EDIT/END button in the AUTO CONTROL section.
An automatic edit begins, using the edit shown in the edit number display.

Before pressing the AUTO EDIT/END button, you can also preview the edit and make any revisions that may be necessary.

For details, see "Revising and Deleting Edits" (page 7-9).

To execute automatic edits continuously

You can also perform continuous automatic editing (auto assembly) using edits registered in the EDL.

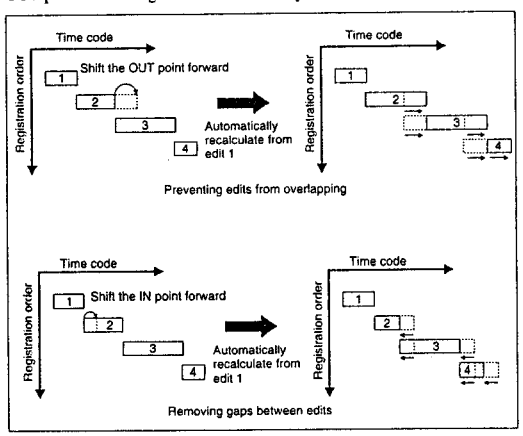
For details, see page 5-73.

About automatic recall of snapshot data during continuous automatic editing

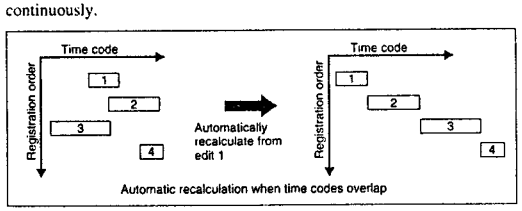
Input effect data which has been registered in snapshot memory is recalled automatically just before the IN point.

Automatically Recalculating Recorder Edit Points for Registered Edits

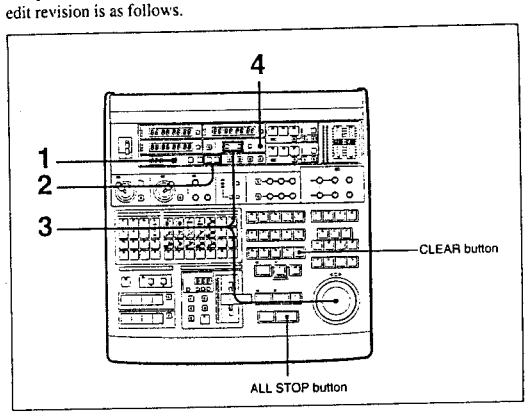
If you recall an already registered edit and modify the recorder edit length, an overlap or gap with respect to the succeeding edit will result. To remove the overlap or gap, the recorder edit points for all suceeding edits need to be shifted so that each edit flows continuously into the next. The unit can perform this operation automatically, recalculating the IN and OUT points for all registered edits after a specified edit.



If two edits have overlapping time code, the overlapping portions are not deleted, even after automatic recalculation. In this case, the unit calculates new edit points for all edits after the first, so that all edits are arranged continuously.



The procedure for automatic recalcuation of recorder edit points after an edit revision is as follows.



1 Press the EDIT MODIFY button, turning it on.

2 Use the '+' and '–' buttons to designate the initial edit.

3 Display setup menu item 204 EDIT POINTS CALCULATE IN SEQUENCE (RECORDER).

4 Press the SET button.

The menu display changes from GO to CANCEL, and automatic recalcuation of recorder edit points begins, starting with the initial edit designated in step **2**.

To cancel an automatic calcuation

Do one of the following.

- Rotate the search dial until CANCEL is displayed, and then press the SET button.
- Press the CLEAR button in the AUTO CONTROL section.
- Press the ALL STOP button.

Note

This function is convenient when you want to record assemble mode edits one after the other on a blank master tape.

Transferring Edits To and From External Equipment

You can connect external equipment such as a personal computer to this unit's EDL IN/OUT connector in order to transfer data to and from the EDL memory.

Note

It is not possible to import snapshots created with external equipment. Importing edit data prepared on external editors and using it to execute an edit or continuous edit (auto assembly) can also result in errors.

About the EDL format

This unit uses the Sony format for EDL data.

Data transmission protocol

The data transmission protocol is factory preset as follows:

Stop bits: 1
Data bits: 8
Parity: None
Transmission speed: 9600 bps
Handshake: X ON / X OFF

To transfer EDL data to external equipment

Designate an arbitrary edit as the initial edit. The initial edit and all subsequent edits will be transferred to the external equipment, except for those edits which you specifically exclude from the transfer.
Before the transfer, use setup menu item 202 EDL SWITCH to make the appropriate setting, depending on the destination and purpose of the transfer.

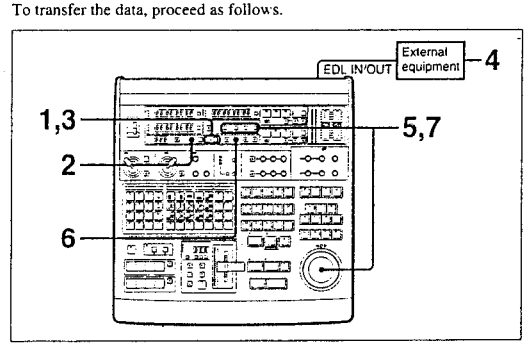
For details about using the setup menu, see Chapter 8.

Destination	Purpose	Menu item 202 EDL SWITCH setting
Computer	Print data created with this unit, or save it to a floppy disk.	DUMP1 (factory default) When this setting is selected, snapshot data can be transferred along with edit data.
Other editor	Use EDL data created with this unit on another editor.	DUMP2 • When this setting is selected, snapshot data cannot be transferred. • The reel numbers are transferred with both hundreds and tens places set to '0'. *For more information about reel numbers, see "EDL Output Format" (page 7-17).*

Note

Always set setup menu item 202 EDL SWITCH to "DUMP2" when transferring data to another editor. Data transferred with the switch set to "DUMP1" cannot be used by the other editor.

To transfer the data, proceed as follows.



Transferring EDL data to external equipment

1 If you want to exclude an edit from the transfer, select the edit using the '+' and '–' buttons in the EDIT PGM section. Otherwise proceed to step **3**.

(Continued)

2 Press the DIS/ENA button.
The '0' in the leftmost column of the edit number display changes to '–'. If there are any more edits that you want to skip, return to step 1.

3 Use the '+' and '–' buttons to designate the initial edit.

4 Make preparations on the external equipment side to receive the data.

5 Depending on the destination and purpose of the transfer, set setup menu item 202 EDL SWITCH to "DUMP1" or "DUMP2", and then select GO.
- If you have selected DUMP2, the transfer begins as soon as you select GO.
- If you have selected DUMP1, proceed to step 6.

6 If you want to transfer edit data only, press the SNAPSHOT button, turning it off.
To stop the transmission after it has begun, press the CLEAR button in the AUTO CONTROL section.

7 Under setup menu item 202 EDL SWITCH, select GO again, and press the SET button to begin the transmission.

To import EDL data from external equipment

Proceed as follows to import data into the EDL from external equipment.

1 Under setup menu item 202 EDL SWITCH, select LOAD and then select GO.

2 Operate the external equipment to begin the data transmission.

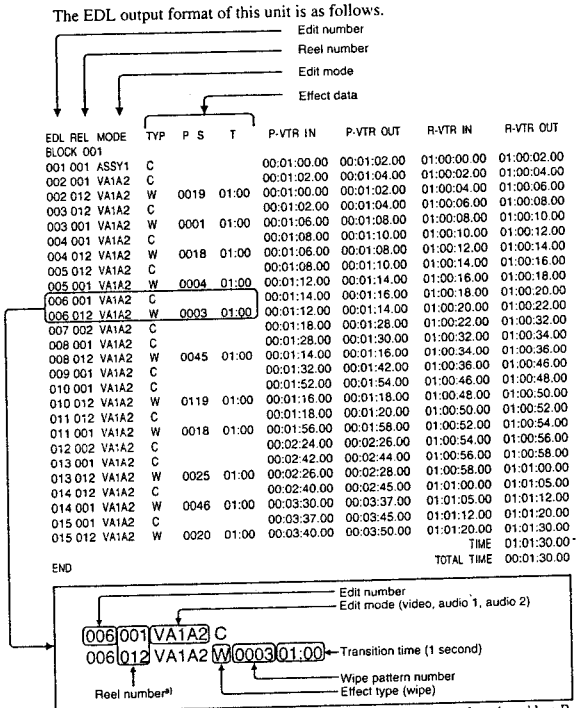
Transferring edit data to external equipment each time an edit is executed

If you set setup menu item 203 SINGLE EDIT MODE to EXT DUMP1, EXT DUMP2, or EXT DUMP3, edit data is transferred to an external device each time you press the AUTO EDIT/END button to execute an automatic edit or press the EDIT STORE (= SHIFT + REVIEW) button to register an edit. However, in this case, edits are not stored automatically in the unit's EDL memory after edit execution.
After finishing editing operations, press the EOF (= SHIFT + SYN ROLL) button to signal the end of edit data transfer to the external equipment.
The three-digit number (001 to 999) displayed in the edit number display is output to the external equipment to allow you to identify the edit.

For more information about setup menu item 203, see "203 SINGLE EDIT MODE" (page 8-17).

EDL Output Format

The EDL output format of this unit is as follows.



a) On this unit, an automatic exchange of the selected sources on bus A and bus B (flipflop) does not occur after the execution of a transition. When data is transferred, the selected sources are always assigned the reel numbers shown below, depending on the setting of setup menu item 202 EDL SWITCH.

EDL SWITCH setting	Reel number assigned to selected source
DUMP1	Bus A: P1=001, P2=002, AUX=003, P1+BKGD=101, P2+BKGD=102, AUX+BKGD=103 Bus B: P1=011, P2=012, AUX=013, P1+BKGD=111, P2+BKGD=112, AUX+BKGD=113, R-VTR=990 (for A-roll edits only) • The hundreds place is '1' for combinations of sources and BKGD (the built-in color background generator). • The tens place is '1' for B-bus sources.
DUMP2	P1 or P1+BKGD=001, P2 or P2+BKGD=002, AUX or AUX+BKGD=003, R-VTR=990 (for A-roll edits only). • The hundreds place and the tens place are always '0'.

Setup Menu Item Table

Settings for the following items can be changed with the setup menu.

Number	Menu grade	Name	Settings
001	BASIC	MENU GRADE	BASIC or ENHANCED menu display
101	BASIC	VIDEO INPUT SELECT	Composite or S-video input
102	BASIC	REMOTE INTERFACE	Communication protocol
103	BASIC	EDIT REFERENCE	Time code type (LTC+/VITC+ or CTL)
104	BASIC	SYNC GRADE	Phase synchronization precision level
105	ENHANCED	RS232C PREROLL TIME	Preroll time when RS-232C interface is used
106	ENHANCED	RS422 PREROLL TIME	Preroll time when RS-422 interface is used
107	ENHANCED	COLOR FRAMING	Color framing or time code
108	ENHANCED	TC JUMP	Action to take when non-consecutive time codes are discovered
109	ENHANCED	FF/REW MODE SELECT	High-speed tape transport mode selected with FF and REW buttons
110[a)]	ENHANCED	FRAME CONTROL MODE	Time code frame control mode (drop frame or non-drop frame)
111	ENHANCED	GPI1 TIMING	GPI1 pulse timing
112	ENHANCED	GPI2 TIMING	GPI2 pulse timing
113	ENHANCED	BEEP	Warning sound on/off
114	ENHANCED	SYNC GRADE DISPLAY	Phase synchronization precision level display on/off
115	ENHANCED	A-ROLL MODE SELECT	Action to take when the freeze pictures cannot be read during A-roll editing
116	ENHANCED	A-ROLL TIMING OFFSET	Auto freeze timing for A-roll editing
117	ENHANCED	USER BITS	User bits
118	ENHANCED	CTL COUNTER AUTO RESET	CTL counter auto reset mode
119	ENHANCED	INPUT EFFECT AUTO SELECT	Buttons or fader lever
120	BASIC	MARK IN CTL AUTO RESET	For editing with CTL signals, selects whether or not the CTL counter is reset automatically when the MARK IN button is pressed.
121	BASIC	REC TIMING OFFSET (OTHERS)	Not used at present.
122[a)]	ENHANCED	LANC FRAME CONTROL	Time code frame control mode (drop frame or non-drop frame) when LANC interface is used
201	BASIC	OVERFLOWED EDIT	EDL memory full recovery
202	BASIC	EDL SWITCH	Upload/download EDL data
203	ENHANCED	SINGLE EDIT MODE	Whether or not to transfer EDL data to external device each time an automatic edit is carried out
204	ENHANCED	EDIT POINTS CALCULATE IN SEQUENCE (RECORDER)	Automatic recalculation of recorder edit points after edit revisions
205	ENHANCED	SET LAST EDIT POINTS	State of control panel after an edit operation
301	ENHANCED	DEVICE TYPE PLAYER1	Player 1 device constant
302	ENHANCED	DEVICE TYPE PLAYER2	Player 2 device constant
303	ENHANCED	DEVICE TYPE RECORDER	Recorder device constant
401	BASIC	AUDIO CROSS POINT LEVEL	A/B bus audio cross point
402	ENHANCED	DIGITAL CNR LEVEL	Color noise removal level
403	ENHANCED	DIGITAL YNR LEVEL	Y (luminance) signal noise removal level
404	ENHANCED	DIGITAL VERTICAL ENHANCER	Sharpness of vertical edge of an image
405	ENHANCED	COLOR CORRECTION ADJUSTMENT WIDTH	Adjustment range covered by the COLOR CORRECTION joystick

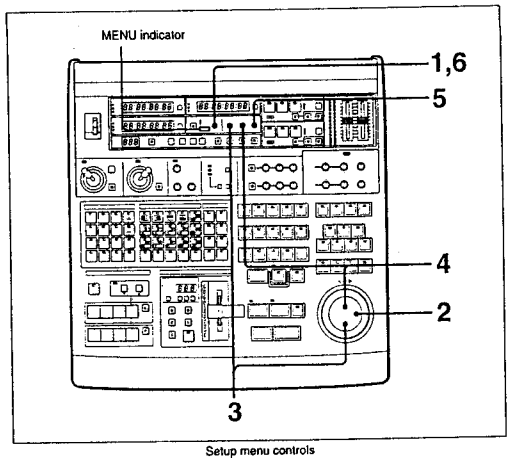
a) FXE-120 only.

(Continued)

Number	Menu grade	Name	Settings
406	ENHANCED	(FXE-120) VIDEO LEVEL & HUE ADJUSTMENT WIDTH (FXE-120P) VIDEO LEVEL & CHROMA PHASE ADJUSTMENT WIDTH	Adjustment range covered by the knobs in the VIDEO LEVEL & HUE section (FXE-120) or VIDEO LEVEL & CHROMA PHASE section (FXE-120P)
407	ENHANCED	H CENTER ADJUSTMENT	Horizontal position of an image

Using the Setup Menu

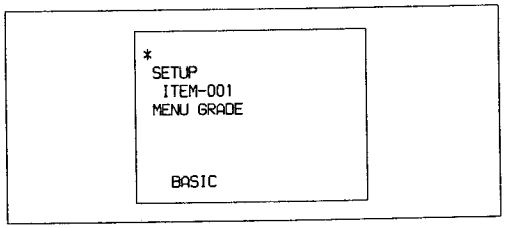
Proceed as follows to select menu items and change item settings.



Setup menu controls

1 Press the SCREEN button, turning on the MENU indicator.

2 Push the search dial in to select jog mode.
The most recently used setup menu item appears on the main monitor screen. The current setting flashes. If the item is set to the factory preset value, an asterisk (*) appears in the upper left corner of the screen.



3 While pressing the MENU button in the DIAL MENU section, rotate the search dial until the desired menu item appears on the screen. Release the MENU button to select the item. The current setting flashes.
If the current item has more than one parameter item for example P1, P2, R and AUX in menu item 101 VIDEO INPUT SELECT *(see the next page)*, rotate the search dial without pressing the MENU button until the desired parameter setting begins flashing.
"MENU" is displayed in the upper right corner of the screen while the MENU button is pressed.

4 While pressing the DATA button in the DIAL MENU section, rotate the search dial until the desired setting appears.
The setting flashes. "DATA" is displayed in the upper right corner of the screen while the DATA button is pressed.

5 Press the SET button.
The setting selected in step **4** is confirmed. "SET" is displayed in the upper right corner of the screen while the SET button is pressed.

6 Press the SCREEN button to extinguish the MENU indicator.

Setup Menu Items

In the on-screen menu item displays and in the "Settings" tables, an asterisk (*) indicates the factory setting for each menu item.

001 MENU GRADE

Select whether the display of setup menu items should be limited to only those items required for normal operations (BASIC), or whether it should include items required for advanced operations (ENHANCED).

```
*
 SETUP
  ITEM-001
 MENU GRADE


   BASIC
```

Settings

*BASIC	Display menu items required for normal operations.
ENHANCED	Display menu items required for both normal and advanced operations.

101 VIDEO INPUT SELECT

Select the type of input signals for the VIDEO INPUT connectors. Rotate the search dial only to select composite video or S-video for player 1, player 2, the recorder and auxiliary source 1.

```
*
 SETUP
  ITEM-101
 VIDEO INPUT SELECT

 P1    P2    R     AUX

 S-V   S-V   S-V   S-V
```

Settings

V	Composite video signals
*S-V	S-video signals

102 REMOTE INTERFACE

Select whether to connect VCRs to this unit over the RS-422, RS-232C, or LANC (for players only) interface. If you select the RS-232C interface, specify the communications speed. You can select separate interfaces and communications speeds for player 1, player 2, and the recorder. Rotate the search dial only to specify the VCR affected by the menu selection.

```
*
 SETUP
  ITEM-102
 REMOTE INTERFACE

 P1      P2      RECORDER

 RS422   RS422   RS422
```

Settings (for recorder)

* RS422	Connect to the RS-422 interface.
9600	Connect to the RS-232C interface. Set communications speed to 9600 bps.
19200	Connect to the RS-232C interface. Set communications speed to 19200 bps.
OTHERS	Reserved for future use.

Settings (for player 1/2)

* RS422	Connect to the RS-422 interface.
9600	Connect to the RS-232C interface. Set communications speed to 9600 bps.
19200	Connect to the RS-232C interface. Set communications speed to 19200 bps.
LANC	Connect to the LANC interface.

103 EDIT REFERENCE

Select the time data type individually for player 1, player 2 and the recorder. Rotate the search dial only to change the VCR whose time data type is to be set.

```
*
 SETUP
  ITEM-103
 EDIT REFERENCE


 PLAYER1  LTC+/VITC+
```

Settings

*LTC+/VITC+
CTL

If you select LTC+/VITC+, interpolation is carried out using CTL values when LTC or VITC signals cannot be read.

104 SYNC GRADE

Select synchronizing precision for VCRs connected to this unit. Rotate the search dial while pressing the DATA button to select player 1, player 2 and the recorder.

```
*
 SETUP
  ITEM-104
 SYNC GRADE


 PLAYER1  ACCURATE
```

Settings	
*ACCURATE	Synchronization is accurate to ±0 frames. The unit monitors VCR synchronization, and does not execute an edit until the VCRs are completely locked. If they cannot be synchronized after three preroll attempts, the accuracy is lowered to +/–1 FRAME.
+/– 1 FRAME	Synchronization is accurate to ±1 frame. Executes an edit if all checkpoints are accurate to within one frame. If VCRs cannot be synchronized after two preroll attempts, the accuracy is lowered to ROUGH.
ROUGH	Executes an edit as soon as sync signals coincide, however briefly. If VCRs cannot be synchronized after two preroll attempts, the accuracy is lowered to PREROLL & PLAY.
PREROLL & PLAY	No synchronization. Execute edit immediately after preroll.Select this setting when you connect VCRs to the PLAYER 1/2 LANC connectors.

105 RS232C PREROLL TIME

Specifies the preroll time for VCRs connected to the PLAYER1/2 and RECORDER RS-232C connectors. Rotate the search dial only to select the affected VCR.

```
*
 SETUP
  ITEM-105
 RS232C  PREROLL TIME

 P1     P2     RECORDER

 3SEC   3SEC   3SEC
```

Settings	
*3SEC	3 seconds
5SEC	5 seconds
7SEC	7 seconds
10SEC	10 seconds

106 RS422 PREROLL TIME

Specifies the preroll time for VCRs connected to the PLAYER1/2 and RECORDER RS-422 connectors.

```
*
 SETUP
  ITEM-106
 RS422  PREROLL TIME


        5SEC
```

Settings	
3SEC	3 seconds
*5SEC	5 seconds
7SEC	7 seconds
10SEC	10 seconds

107 COLOR FRAMING

Select whether color framing or time code should be given priority when recording on the master tape.

```
*
 SETUP
  ITEM-107
 COLOR FRAMING


        OFF
```

Settings	
*OFF	Use time codes recorded on the master tape.
VTR SETTING	Use the color framing settings selected on the recorder VCR side.

108 TC JUMP

Select whether or not to continue editing when non-consecutive time codes are discovered between the preroll point and the IN point. To select settings for player 1, player 2, and the recorder, rotate the search dial only while pressing the DATA button.

```
*
 SETUP
  ITEM-108
 TC JUMP


 PLAYER1  INHIBITED
```

Settings	
ALLOWED	Continue editing despite non-consecutive time codes.
*INHIBITED	Do not continue editing.

Note

When time codes are not consecutive, it takes longer to cue up an edit point.

109 FF/REW MODE SELECT

Select the high-speed transport mode selected by pressing the REW (rewind) and FF (fast forward) buttons in the MANUAL CONTROL section.

```
*
 SETUP
  ITEM-109
 FF/REW MODE SELECT


    SHUTTLE MAX
```

Settings

*SHUTTLE MAX	Maximum-speed shuttle mode
FF/REW	Fast forward and rewind mode

110 FRAME CONTROL MODE (FXE-120 only)

Select the frame control mode for time code processing (drop-frame or non-drop-frame mode).

```
*
 SETUP
  ITEM-110
 FRAME CONTROL MODE


        AUTO
```

Settings

*AUTO	Use the mode found on recorder tape.
DF	Drop-frame mode
NDF	Non-drop-frame mode

Note

If you execute a first edit when this item is set to AUTO, time code is inserted in non-drop-frame mode.

111 GPI1 TIMING
112 GPI2 TIMING

Select the timing and pulse width of pulses output from the GPI1 OUT and GPI2 OUT connectors. Pulses may be output at the IN point, at the effect starting point, or at the OUT point, as selected here.
When this menu is displayed, one of the IN, EFFECT or OUT settings will be visible and flashing. If, at this point, you press the DATA button and rotate the search dial, you can select the other settings. When you reach the desired setting, release the DATA button and the frame count begins to flash. In this state, you can rotate the search dial while pressing the DATA button to select an offset in frames between the IN, effect or OUT point and the point where the pulses are actually output. Or you can rotate the search dial only to select the pulse width.

```
*
 SETUP
  ITEM-111
 GPI1 TIMING


 POSITION      WIDTH
  IN 00FRAMES 10FRAMES
```

```
*
 SETUP
  ITEM-112
 GPI2 TIMING


 POSITION      WIDTH
EFFECT 00FRAMES 10FRAMES
```

Output point settings

*IN	IN point (GPI1 factory default)
*EFFECT	Effect starting point (GPI2 factory default)
OUT	OUT point

Output timing settings

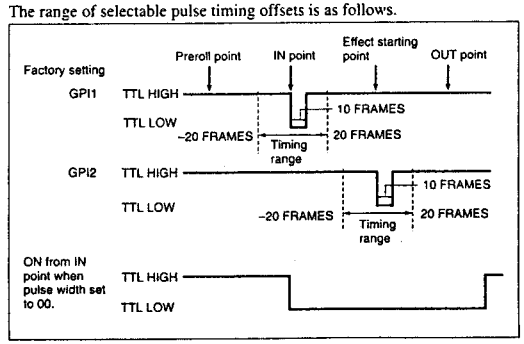
*00FRAMES
–20 to 20 FRAMES

Pulse width settings

*10FRAMES
00 to 10FRAMES[a]

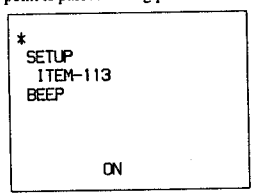
a) When set to 00, the GPI pulse remains ON until the end of the edit.

The range of selectable pulse timing offsets is as follows.



113 BEEP

Choose whether or not to beep when a key is pressed, and when an edit point is passed during preview or automatic edit execution.

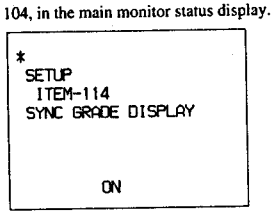


Settings

OFF	Do not beep.
*ON	Beep.

114 SYNC GRADE DISPLAY

Select whether or not to include the VCR sync grade, set under menu item 104, in the main monitor status display.

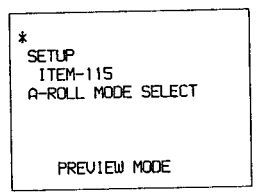


Settings

OFF	Do not display.
*ON	Display.

115 A-ROLL MODE SELECT

In A-roll editing, some recorder VCRs enter E-E mode before the IN point, making it impossible to read in a freeze frame. When this occurs, select PREVIEW MODE under this item before executing the edit.



Settings AUTO

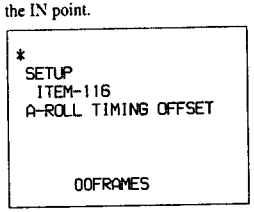
AUTO EDIT MODE	When AUTO EDIT/ END button is pressed, read in frame two frames before recorder IN point and execute edit immediately.
* PREVIEW MODE	When AUTO EDIT/ END button is pressed, enter preview mode and read in playback frame one frame before recorder IN point. Then enter edit mode and begin recording.

Note

When this item is set to PREVIEW MODE the unit requires more time to execute an edit.

116 A-ROLL TIMING OFFSET

In A-roll editing, the frame before the recorder IN point is read into digital frame memory. But depending on the VCR in use, automatic freeze timing may be off by a certain number of frames. If the unit is unable to read in the correct freeze frame, use this item to specify an offset in frames between the correct frame and the frame which was actually read in. For example, if the frame actually read in was two frames after the IN point, set this menu item to –03 FRAMES to read in the frame one frame before the IN point.

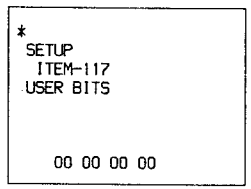


Settings

*00 FRAMES	Do not adjust timing.
–10 to 10 FRAMES	Adjust timing by number of frames.

117 USER BITS

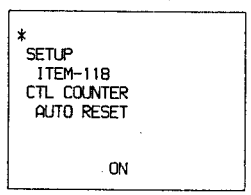
You can freely use the 32 bits in the user bits section of time code to record information such as dates or cut numbers. Rotate the search dial only to select two-digit hexadecimal values between 00 and FF.



Settings	
*00	
00 to FF	

118 CTL COUNTER AUTO RESET

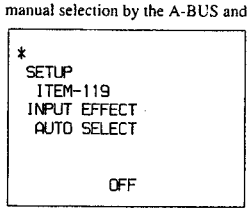
Choose whether or not to automatically reset the CTL counter when the unit is turned on and off, and when tapes are ejected.



Settings	
*ON	Reset
OFF	Do not reset.

119 INPUT EFFECT AUTO SELECT

Either the fader lever or the A-BUS and B-BUS buttons in the INPUT EFFECT section can be used to select the bus affected by input effects. Use this menu item to choose automatic selection by the fader lever, or manual selection by the A-BUS and B-BUS buttons.



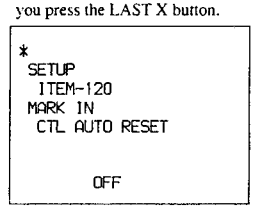
Settings	
*OFF	Input effect bus selected by A-BUS and B-BUS buttons, regardless of fader lever position.
ON	Input effect bus selected by fader lever position. A-BUS and B-BUS buttons are disabled and do not light when pressed.

120 MARK IN CTL AUTO RESET

For editing with CTL signals, this item selects whether or not the CTL counter is reset automatically when the MARK IN button is pressed. If you set this item to ON, and press the MARK IN button, the IN point is set to zero and durations and OUT points are cleared. If you set a recorder IN point pressing the MARK IN button and execute an edit, the value remaining in the CTL counter indicates the duration.
When you are editing with a consumer VCR equipped with a linear time counter and connected to the PLAYER 1/2 LANC connector of this unit, editing precision is limited to units of seconds. But if you set the setup menu item 103 EDIT REFERENCE to CTL and set this item to ON, you can edit with a precision of one frame.

Notes

- If you set this item to ON, meaningless data remains in EDL memory after you execute an edit. Note that you cannot obtain the expected results if you execute a continuous automatic edit while the unit is in this state.
- If you set this item to ON and set an IN point by pressing the MARK IN button, you cannot restore the IN point set in the previous edit even when you press the LAST X button.



Settings	
*OFF	Do not reset the CTL counter when the MARK IN button is pressed.
ON	When setup menu item 103 EDIT REFERENCE is set to CTL, reset the CTL counter and execute an edit when the MARK IN button is pressed.

122 LANC FRAME CONTROL (FXE-120 only)

Specifies the time code frame control mode (drop frame or non-drop frame) for VCRs connected to the PLAYER 1/2 LANC connectors. Rotate the search dial only to select the affected VCR (P1 or P2).

For VCRs which can be used with this unit as players, refer to "Player VCRs Connectable Over the LANC Interface", given on a sheet supplied with this unit.

```
*
 SETUP
  ITEM-122
 LANC  FRAME  CONTROL

       P1     P2

      AUTO   AUTO
```

Settings

*AUTO	Automatically use the frame control mode found on the player tape.
DF	Use drop frame mode regardless of the mode of time code recorded on the player tape.
NDF	Use non-drop frame mode regardless of the mode of time code recorded on the player tape.

201 OVERFLOWED EDIT

Specifies how the unit should respond if an attempt is made to register a new edit when the EDL is already full (already contains 99 edits).

```
*
 SETUP
  ITEM-201
 OVERFLOWED EDIT


     INHIBITED
```

Settings

*INHIBITED	The new edit is not registered, and an error code is displayed in the time counter display.
OVER-WRITE	Edit number 001 is overwritten by the new edit.
ALL CLEAN UP	All edits are deleted from EDL memory.

202 EDL SWITCH

Transfer or receive EDL data through the RS-232C connectors.
Display the DUMP1 or DUMP2 item when you want to export data, or the LOAD item when you want to import data, and then press the SET button. Next rotate the search dial to select GO and press the SET button once more to begin the transmission.
If you selected DUMP1, the SNAPSHOT button in the EDIT PGM section begins to flash. To transfer edit data only, press the SNAPSHOT button, turning it off. Then select GO again and press the SET button to begin the transfer of edit data only.
When the transfer begins, the GO display automatically changes to CANCEL.
To cancel a transfer after it has already begun, do one of the following.
- Rotate the search dial to display CANCEL, and then press the SET button.
- Press the CLEAR button in the AUTO CONTROL section.
- Press the ALL STOP button.

```
*
 SETUP
  ITEM-202
 EDL SWITCH


   DUMP1    GO
```

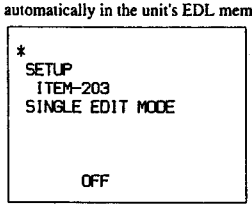
Settings

*DUMP1	Transfer data created with this unit to a computer in order to print the data or save it to a floppy disk.
DUMP2	Transfer data created with this unit to another editor in order to use the data on the other editor. • Snapshot data cannot be transferred. • The reel numbers are transferred with both hundreds and tens places set to '0'.
LOAD	Receive data.

*GO	Begin transmission.
CANCEL	Stop transmission.

203 SINGLE EDIT MODE

Select whether or not to transfer edit data to the external device connected to the EDL IN/OUT connector each time you press the AUTO EDIT/END button to execute an automatic edit, or press the STORE or EDIT STORE (= SHIFT + REVIEW) button to register an edit in the unit's EDL memory. If this item is set to a setting other than OFF, edits are not stored automatically in the unit's EDL memory after edit execution.

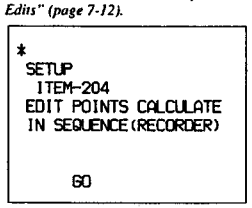


Settings	
*OFF	Do not transfer edit data to external device.
EXT DUMP1	In FXE-120/120P mode, transfer edit data and snapshot data to external device.
EXT DUMP2	In FXE-120/120P mode, transfer edit data only to external device. Do not transfer snapshot data.
EXT DUMP3	Transfer edit data for use by an editor other than the FXE-120/120P. Do not transfer snapshot data. Set the 100s and 10s places of the reel number to '0'.

204 EDIT POINTS CALCULATE IN SEQUENCE (RECORDER)

Press the SET button with this menu item displayed to designate an initial edit for automatic recorder edit point calculation. The unit calculates recorder edit points for all succeeding registered edits, so that there are no gaps or overlaps between edits.

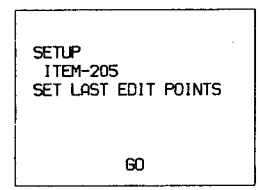
For details, see "Automatically Recalculating Recorder Edit Points for Registered Edits" (page 7-12).



Settings	
*GO	Start automatic calculation.
CANCEL	Cancel automatic calculation.

205 SET LAST EDIT POINTS

To change the state of the control panel to the same state as after execution of the newest edit among the registered edits, display this menu item on the main monitor screen and press the SET button in the DIAL MENU section.



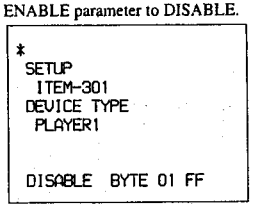
Settings	
GO	Execute changing the state of the control panel.

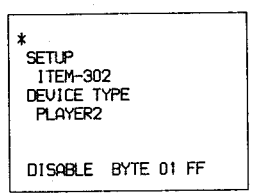
301 DEVICE TYPE PLAYER 1
302 DEVICE TYPE PLAYER 2
303 DEVICE TYPE RECORDER

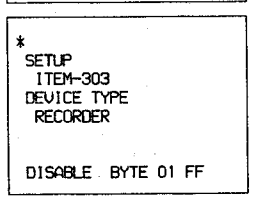
Using status signals sent by the VCR, this unit is able to automatically identify many commonly used VCRs, and to control tape transport for those VCRs by referring to an internal device constant table.
VCR device constants are made up of 15 data items, each item being expressed as a two-digit hexadecimal number.

For details, see "VCR constant data items" (page 8-20) and "Automatically detected VCRs and internal device constants" (page 8-21).

Normally it should not be necessary to set VCR constants manually. But depending on operating conditions and the type of VCR, the unit is sometimes unable to achieve the precise control needed for editing. In such cases, you can use these menu items to define new device constants for each VCR.
To define a device constant, set the DISABLE/ENABLE parameter to ENABLE, select the data byte (a decimal number between 00 and 15) which you want to modify, and then select a two-digit hexadecimal value for that byte.
When not using a newly defined device constant, return the DISABLE/ENABLE parameter to DISABLE.







Settings	
*DISABLE	Use the unit's device constant table instead of user-defined device constants.
ENABLE	Use user-defined device constants.

Item number	Value
BYTE 01 to 15 (decimal)	00 to FF (hexadecimal)

VCR constant data items

VCR constant data items

Item number	Setting	Meaning
BYTE 01 BYTE 02	Device type	Defines the VCR type. **Factory default:** BYTE 01: FF BYTE 02: FF
BYTE 03 BYTE 04	Minimum preroll time	Specifies the minimum preroll time required by the VCR in units of frames. The preroll time specified here is always used, even if setup menu item 105 RS232C PREROLL TIME or item 106 RS422 PREROLL TIME is used to specify a shorter time. BYTE 03 is the most significant byte. **Factory default:** 00 5A (FXE-120) or 00 55 (FXE-120P)
BYTE 05	Edit delay	Corrects for the delay in frames from the time when a REC command is sent to the VCR until the time when recording actually starts. **Factory default:** 05
BYTE 06	E-E delay	Corrects for the delay in frames from the time when a PB/EE command is sent to the VCR until the time when it actually enters preview mode. **Factory default:** 05
BYTE 07	Overrun delay	Corrects for the overrun in frames past a specified preroll point in a preroll stop. **Factory default:** 03 (FXE-120) or 02 (FXE-120P)
BYTE 08	Trajectory	Specifies the optimum speed curve for preroll. Higher values are required for VCRs with lower positionability. **Factory default:** 84
BYTE 09	Time code read delay	Corrects for the delay in frames from the time when a VCR receives a tape transport command until the time when it is able to read time code. **Factory default:** 0A
BYTE 10	Pinch-on delay	Corrects for the delay in frames from the time when a VCR receives a tape transport command until it actually begins moving the tape. **Factory default:** 08 (FXE-120) or 07 (FXE-120P)
BYTE 11	Post-sync delay (–)	For the transition to playback after synchronization, specifies the optimum command delay in frames for servo-lock from lower speeds. **Factory default:** FB
BYTE 12	Post-sync delay (+)	For the transition to playback after synchronization, specifies the optimum command delay in frames for servo-lock from higher speeds. **Factory default:** 00
BYTE 13	Mode 1	Bits 1 to 7: Specify the maximum framing value permitted by the VCR format. 0: 2-field lock 1: 4-field lock 3: 8-field lock Bit 8: Specifies whether or not the VCR permits CTL (timer) interpolation of time code. 1: Possible 0: Not possible **Factory default:** 80
BYTE 14	Mode 2	Bit 1: Specifies whether color framing status from the VCR is enabled or disabled. 1: Enabled 0: Disabled Bits 2 to 8: Specify the maximum time in frames until VCR frame lock. **Factory default:** 2E (FXE-120) or 2A (FXE-120P)
BYTE 15	Max preroll speed	Specifies the maximum tape speed during preroll as a multiple of normal tape speed. When set to FF, the speed is the same as fast forward and rewind speed. **Factory default:** FF

Automatically detected VCRs and internal device constants

The FXE-120/120P is able to detect VCRs in the following table automatically, and to control them using the constant values (hexadecimal) in data items 3 through 15.

FXE-120 internal device constants for Sony VCRs

VCR type	Data item														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
VO-5800	10	00	00	96	03	03	04	03	0F	05	FF	00	80	78	05
VO-5850	10	F0	00	96	03	03	04	03	0F	05	FF	00	80	78	05
VO-9800	10	48	00	96	08	08	04	0C	0A	04	FF	00	00	78	08
VO-9850	10	4C	00	96	08	08	04	0C	0A	04	FF	00	00	78	08
BVU-800	10	00	00	96	03	03	02	03	0F	07	FF	00	00	78	FF
BVU-820	10	01	00	96	03	03	02	03	0F	07	FF	00	00	78	FF
BVU-850	10	02	00	96	03	03	02	03	0F	07	FF	00	00	78	FF
BVU-870	10	03	00	96	03	03	02	03	0F	07	FF	00	00	78	FF
BVU-900	10	18	00	96	08	08	03	06	0A	04	FF	00	00	78	FF
BVU-920	10	19	00	96	08	08	03	06	0A	04	FF	00	00	78	FF
BVU-950	10	1C	00	96	08	08	03	06	0A	04	FF	00	00	78	FF
SVP-9000	10	28	00	96	08	08	05	8A	0A	04	FF	00	00	78	0A
SVO-9600	10	2C	00	96	08	08	05	8A	0A	04	FF	00	00	78	0A
BVW-10	20	00	00	96	05	05	02	02	0F	07	FB	00	81	3C	FF
BVW-40	20	01	00	96	05	05	02	02	0F	07	FB	00	81	3C	FF
BVW-11	20	02	00	96	05	05	02	03	1E	07	FB	00	81	3C	FF
BVW-15	20	03	00	96	05	05	02	02	23	07	FB	00	81	3D	FF
BVW-35	20	10	00	B4	05	05	08	02	1E	0A	FF	00	81	3C	FF
BVW-60	20	20	00	96	05	05	03	0A	0C	07	FB	00	81	3D	FF
BVW-65	20	21	00	96	05	05	03	0A	0C	07	FB	00	81	3D	FF
BVW-95	20	22	00	96	05	05	03	0A	0C	07	FB	00	81	3D	FF
BVW-96	20	23	00	96	05	05	03	0A	0C	07	FB	00	81	3D	FF
BVW-70	20	24	00	96	05	05	03	0A	0C	07	FB	00	81	3D	FF
BVW-75	20	25	00	96	05	05	03	0A	0C	07	FB	00	81	3D	FF
BVW-D75	20	46	00	96	05	05	03	04	0A	08	FB	00	99	31	FF
PVW-2600	20	40	00	96	05	05	03	04	0A	08	FB	00	81	19	FF
PVW-2800	20	41	00	96	05	05	03	04	0A	08	FB	00	81	19	FF
PVW-2650	20	42	00	96	05	05	03	84	0A	08	FB	00	9D	19	FF
UVW-1600	20	50	00	5A	05	05	03	84	0A	08	FB	00	80	2E	FF
UVW-1800	20	51	00	5A	05	05	03	84	0A	08	FB	00	80	2E	FF
DVR-1000 (525)	30	00	00	96	07	07	04	0B	0A	0F	FC	00	81	41	FF
DVR-2000 (525)	30	10	00	96	07	07	04	98	13	07	F2	00	81	3D	FF
DVR-2100 (525)	30	11	00	96	07	07	04	98	13	07	FA	00	81	3D	FF
DVR-10	40	00	00	96	07	07	04	12	0D	0B	FC	00	81	3D	FF
DVR-18	40	03	00	96	07	07	04	12	0D	0B	FC	00	81	3D	FF
DVR-20	40	20	00	96	07	07	04	8A	0A	0A	FC	00	81	5B	FF
DVR-28	00	22	00	96	07	07	04	8A	0A	0A	FC	00	81	5B	FF
EVO-9800/9800A	80	08	00	96	08	08	07	94	0A	07	FC	00	00	5A	07
EVO-9850	80	0C	00	96	05	05	07	80	0A	06	FC	00	00	5A	0A
SVO-5800	10	20	00	96	09	09	05	8A	0A	05	FA	02	80	5A	0A
SVP-5600	10	21	00	96	09	09	05	8A	0A	05	FA	02	80	5A	0A
LVR-5000	A0	00	00	96	03	03	01	81	0A	02	FF	00	00	0A	FF
LVR-5000A	A0	01	00	96	03	03	01	81	0A	02	FF	00	00	0A	FF
LVR-3000N/3000AN	A0	02	00	96	03	03	01	81	0A	02	FF	00	00	0A	FF
LVA-3700	A0	11	00	96	03	03	01	81	0A	02	FF	00	00	0A	FF
LVA-7000	A0	10	00	96	03	03	01	81	0A	02	FF	00	00	0A	FF

For more information about connecting VCRs that do not appear in the above table, contact a Sony service representative.

FXE-120 internal device constants for other VCRs

VCR type		Data item														
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
JVC	BR-S822	F0	1F	00	96	09	09	02	03	0F	03	FE	01	80	78	FF
	BR-S622	F0	1F	00	96	09	09	02	03	0F	03	FE	01	80	78	FF
	BR-S522	F0	1F	00	96	09	09	02	03	0F	03	FE	01	80	78	FF
	BR-S525	F0	1F	00	96	09	09	02	03	0F	03	FE	01	80	78	FF
	BR-S800	F0	26	00	96	0A	0A	02	03	0F	07	FB	01	80	78	F0
	BR-S500	F0	26	00	96	0A	0A	02	03	0F	07	FB	01	80	78	F0
Panasonic	AG-7750	A0	80	00	96	0A	0A	02	03	0F	03	FF	00	81	78	FF
	AG-7650	A0	81	00	96	0A	0A	02	03	0F	03	FF	00	81	78	FF
	AG-DS850	A0	82	00	96	0A	0A	02	03	0F	03	FF	00	81	78	FF
	AG-DS840	A0	83	00	96	0A	0A	02	03	0F	03	FF	00	81	78	FF
	AU-665H	A0	13	00	96	07	07	02	03	0F	03	FF	00	81	78	FF
	AU-65H	A0	15	00	96	07	07	02	03	0F	03	FF	00	81	78	FF
	AU-62H	A0	16	00	96	07	07	02	03	0F	03	FF	00	81	78	FF
	AU-63H	A0	17	00	96	07	07	02	03	0F	03	FF	00	81	78	FF
	AU-66H	A0	19	00	96	07	07	02	03	0F	03	FF	00	81	78	FF
	AU-55H	A0	20	00	96	07	07	02	03	0F	03	FF	00	81	78	FF
	AU-W35H	A0	21	00	96	07	07	02	03	0F	03	FF	00	81	78	FF
	AU-W32H	A0	22	00	96	07	07	02	03	0F	03	FF	00	81	78	FF
	AU-W33H	A0	23	00	96	07	07	02	03	0F	03	FF	00	81	78	FF

For more information about connecting VCRs that do not appear in the above table, contact a Sony service representative.

FXE-120P internal device constants for Sony VCRs

VCR type	Data item														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
VO-5800P	11	00	00	7D	03	03	04	03	0F	05	FF	00	81	64	05
VO-5850P	11	F0	00	7D	03	03	04	03	0F	05	FF	00	81	64	05
VO-9800P	11	48	00	7D	08	08	04	0C	0A	04	FF	00	01	64	08
VO-9850P	11	4C	00	7D	08	08	04	0C	0A	04	FF	00	01	64	08
BVU-800P	11	00	00	7D	03	03	02	03	0F	07	FF	00	01	64	FF
BVU-820P	11	01	00	7D	03	03	02	03	0F	07	FF	00	01	64	FF
BVU-850P	11	02	00	7D	03	03	02	03	0F	07	FF	00	01	64	FF
BVU-870P	11	03	00	7D	03	03	02	03	0F	07	FF	00	01	64	FF
BVU-900P	11	18	00	7D	08	08	03	06	0A	04	FF	00	01	64	FF
BVU-920P	11	19	00	7D	08	08	03	06	0A	04	FF	00	01	64	FF
BVU-950P	11	1C	00	7D	08	08	03	06	0A	04	FF	00	01	64	FF
SVO-5800P	11	20	00	7D	0A	0A	05	8A	0A	05	F7	00	81	32	0F
SVP-5600P	11	21	00	7D	0A	0A	05	8A	0A	05	F7	00	81	32	0F
SVP-9020	11	28	00	7D	08	08	05	8A	0A	04	FF	00	01	4B	0A
SVO-9620	11	2C	00	7D	08	08	05	8A	0A	04	FF	00	01	4B	0A
BVW-10P	21	00	00	7D	05	05	02	02	0F	07	FB	00	83	32	FF
BVW-40P	21	01	00	7D	05	05	02	02	0F	07	FB	00	83	32	FF
BVW-11P	21	02	00	7D	05	05	02	03	1E	07	FB	00	83	32	FF
BVW-15P	21	03	00	7D	05	05	02	02	23	07	FB	00	83	33	FF
BVW-35P	21	10	00	96	05	05	08	02	1E	0A	FF	00	83	32	FF
BVW-60P	21	20	00	7D	05	05	03	0A	0C	07	FB	00	83	3B	FF
BVW-65P	21	21	00	7D	05	05	03	0A	0C	07	FB	00	83	3B	FF
BVW-95P	21	22	00	7D	05	05	03	0A	0C	07	FB	00	83	3B	FF
BVW-96P	21	23	00	7D	05	05	03	0A	0C	07	FB	00	83	3B	FF
BVW-70P	21	24	00	7D	05	05	03	0A	0C	07	FB	00	83	3B	FF
BVW-75P	21	25	00	7D	05	05	03	0A	0C	07	FB	00	83	3B	FF
BVW-D75PS	21	46	00	7D	05	05	03	04	0A	08	FB	00	9B	31	FF
PVW-2600P	21	40	00	7D	05	05	03	04	0A	07	FF	00	83	31	FF
PVW-2800P	21	41	00	7D	05	05	03	04	0A	07	FF	00	83	31	FF
PVW-2650P	21	42	00	7D	05	05	03	84	0A	08	FB	00	9F	19	FF
UVW-1600P	21	50	00	55	05	05	02	84	0A	07	FB	00	80	2A	FF
UVW-1800P	21	51	00	55	05	05	02	84	0A	07	FB	00	80	2A	FF
DVR-1000 (625)	31	00	00	7D	07	07	04	0B	0A	0F	FC	00	83	41	FF
DVR-2000 (625)	31	10	00	7D	07	07	04	98	13	07	F2	00	83	33	FF
DVR-2100 (625)	31	11	00	7D	07	07	04	98	13	07	FA	00	83	33	FF
DVR-10P	41	00	00	7D	07	07	04	12	0D	0B	FC	00	83	3D	FF
DVR-18P	41	03	00	7D	07	07	04	12	0D	0B	FC	00	83	3D	FF
DVR-20P	41	20	00	7D	07	07	03	82	0A	06	FC	00	83	5B	FF
DVR-28P	41	22	00	7D	07	07	03	82	0A	06	FC	00	83	5B	FF
EVO-9800P	81	08	00	7D	08	08	08	8E	0A	07	FC	00	01	5B	07
EVO-9850P	81	0C	00	7D	05	05	07	80	0A	0A	FC	FE	01	4C	0A
LVR-6000	A1	00	00	7D	03	03	01	81	0A	02	FF	00	00	0A	FF
LVR-6000A	A1	01	00	7D	03	03	01	81	0A	02	FF	00	00	0A	FF
LVR-8000P	A1	10	00	7D	03	03	01	81	0A	02	FF	00	00	0A	FF
LVA-4000P	A1	02	00	7D	03	03	01	81	0A	02	FF	00	00	0A	FF
LVA-4700P	A1	11	00	7D	03	03	01	81	0A	02	FF	00	00	0A	FF

For more information about connecting VCRs that do not appear in the above table, contact a Sony service representative.

FXE-120P internal device constants for other VCRs

VCR type		Data item														
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
JVC	BR-S822E	F1	1F	00	7D	0A	0A	02	03	0F	03	FE	01	81	65	FF
	BR-S622E	F1	1F	00	7D	0A	0A	02	03	0F	03	FE	01	81	65	FF
	BR-S522E	F1	1F	00	7D	0A	0A	02	03	0F	03	FE	01	81	65	FF
	BR-S525E	F1	1F	00	7D	0A	0A	02	03	0F	03	FE	01	81	65	FF
	BR-S800E	F1	26	00	7D	0A	0A	02	03	0F	07	FB	01	81	65	F0
	BR-S500E	F1	26	00	7D	0A	0A	02	03	0F	07	FB	01	81	65	F0
Panasonic	AG-7750E	A1	80	FF	FF	0A	0A	01	00	03	01	FF	00	83	00	FF
	AG-7650E	A1	81	FF	FF	0A	0A	01	00	03	01	FF	00	83	00	FF
	AG-DS850E	A1	82	FF	FF	0A	0A	01	00	03	01	FF	00	83	00	FF
	AG-DS840E	A1	83	FF	FF	0A	0A	01	00	03	01	FF	00	83	00	FF
	AU-665HE	A1	13	00	7D	07	07	02	03	0F	03	FF	00	83	64	FF
	AU-662E	A1	14	00	7D	07	07	02	03	0F	03	FF	00	83	64	FF
	AU-65HE	A1	15	00	7D	07	07	02	03	0F	03	FF	00	83	64	FF
	AU-62HE	A1	16	00	7D	07	07	02	03	0F	03	FF	00	83	64	FF
	AU-63HE	A1	17	00	7D	07	07	02	03	0F	03	FF	00	83	64	FF
	AU-66HE	A1	19	00	7D	07	07	02	03	0F	03	FF	00	83	64	FF
	AU-55HE	A1	20	00	7D	07	07	02	03	0F	03	FF	00	83	64	FF
	AU-W35HE	A1	21	00	7D	07	07	02	03	0F	03	FF	00	83	64	FF
	AU-W32HE	A1	22	00	7D	07	07	02	03	0F	03	FF	00	83	64	FF
	AU-W33HE	A1	23	00	7D	07	07	02	03	0F	03	FF	00	83	64	FF

For more information about connecting VCRs that do not appear in the above table, contact a Sony service representative.

401 AUDIO CROSS POINT LEVEL

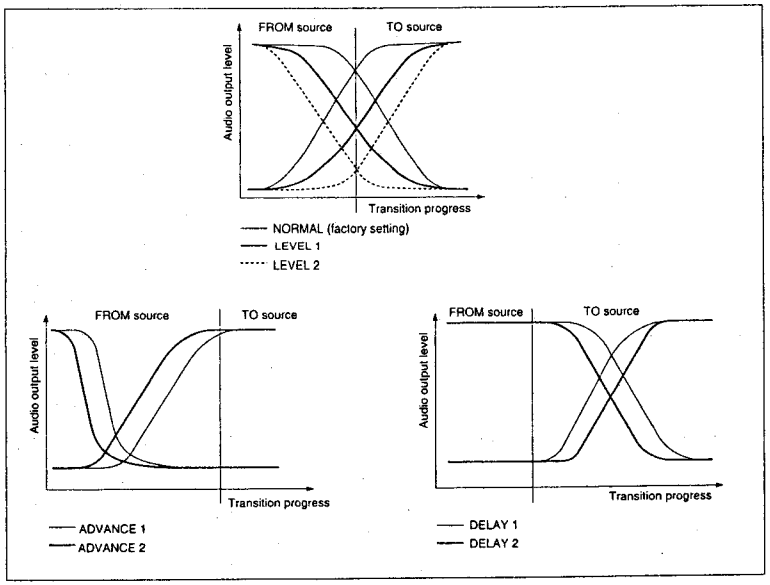
Select the audio level of the cross point where audio signals from the two buses intermix.

```
*
 SETUP
  ITEM-401
 AUDIO CROSS
  POINT LEVEL

        NORMAL
```

Settings

*NORMAL	FROM source and TO source audio output at normal volume.
LEVEL1	Volumes cross at intermediate level, so volume is slightly lower than normal.
LEVEL2	Volumes cross at low level, so volume is significantly lower than normal.
ADVANCE1	FROM to TO source audio crossover is slightly in advance of video crossover.
ADVANCE2	FROM to TO source audio crossover is significantly in advance of video crossover.
DELAY1	FROM to TO source audio crossover is slightly delayed from video crossover.
DELAY2	FROM to TO source audio crossover is significantly delayed from video crossover.
RESERVE1, RESERVE2	Currently has the same effect as the NORMAL setting.



402 DIGITAL CNR LEVEL

Select the color noise reduction (CNR) level for video read into digital frame memory. Rotate the search dial only to select settings for bus A and bus B.

```
*
 SETUP
  ITEM-402
 DIGITAL CNR LEVEL
   A-BUS     B-BUS
   OFF       OFF
```

Settings

*OFF	No CNR
LOW	Low level
MIDDLE	Middle level
HIGH	High level

Note

If CNR is set to HIGH, a faint color shadow remains from the previous frame when frames are switched. This is not a malfunction in the unit.

403 DIGITAL YNR LEVEL

Select the luminance (Y signal) noise reduction level for video read into digital frame memory. Rotate the search dial only to select settings for bus A and bus B.

```
*
 SETUP
  ITEM-403
 DIGITAL YNR LEVEL
   A-BUS     B-BUS
   OFF       OFF
```

Settings

*OFF	No YNR
VERY LOW	Very low level
LOW	Low level
MIDDLE	Middle level
HIGH	High level

404 DIGITAL VERTICAL ENHANCER

Select the trigger level for the vertical enhancement circuits, which produce sharp edges in the picture. Rotate the search dial only to select settings for bus A and bus B.

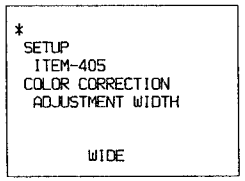
```
*
 SETUP
  ITEM-404
 DIGITAL
  VERTICAL ENHANCER
   A-BUS     B-BUS
   OFF       OFF
```

Settings

*OFF	No vertical enhancement
VERY LOW	Very low level
LOW	Low level
MIDDLE	Middle level
HIGH	High level

405 COLOR CORRECTION ADJUSTMENT WIDTH

Select the COLOR CORRECTION joystick range.



Settings

*WIDE	Coarse adjustment
FINE	Fine adjustment

406 VIDEO LEVEL & HUE ADJUSTMENT WIDTH (FXE-120) VIDEO LEVEL & CHROMA PHASE ADJUSTMENT WIDTH (FXE-120P)

Select the adjustment range for the HUE (FXE-120) or CHROMA PHASE (FXE-120P), LUMINANCE and CHROMINANCE knobs in the VIDEO LEVEL & HUE (FXE-120) or VIDEO LEVEL & CHROMA PHASE (FXE-120P) section.

Settings

WIDE	Coarse adjustment
*FINE	Fine adjustment

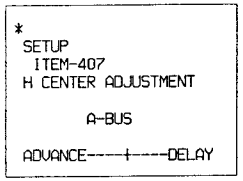
Note for FXE-120P

When adjusting the color subcarrier phase, use a vectorscope to measure the adjustments.

a) FXE-120: VIDEO LEVEL & HUE
FXE-120P: VIDEO LEVEL & CHROMA PHASE

407 H CENTER ADJUSTMENT

Adjust to control picture stability and horizontal position (horizontal sync phase). While pressing the DATA button, rotate the search dial counterclockwise to move the cross cursor toward ADVANCE (the picture shifts to the left), and clockwise to move it toward DELAY (the picture shifts to the right). Rotate the search dial only to select settings for bus A and bus B.



Settings

*Center	Do not adjust the phase.
ADVANCE	Advance the phase.
DELAY	Delay the phase.

Note

- Proceed carefully when adjusting the sync phase.
- After adjusting the picture position with the search dial, press the SET button.
  If the SET button is not pressed, the picture returns to its original position.

Error Messages

When you try to perform an illegal operation, or when there is a problem with the connected VCRs, an error code is shown in the appropriate time counter display and an error message is shown in the main monitor status display. Take the action shown below to correct the problem.

Note

Error messages use the following abbreviations to refer to VCRs.

P1: Player 1
P2: Player 2
R: Recorder

Error code	Error message	Meaning	Action to take
01	CANNOT CONTROL DUE TO VTR LIMITATION	A limitation on the VCR side prevented execution of an edit setting.	Consult your VCR manuals and execute the edit again after removing the limitation.
02	CANNOT CUE UP P1, P2, R	The specified edit point cannot be cued up.	Check whether the edit point exists on the tape. If time code data on the tape is discontinuous, use setup menu item 108 TC JUMP to select discontinuous time code for the VCR, then try to cue up again.
03	CANNOT EXECUTE P1, P2, R	Edit execution began but could not be completed.	Check the VCR(s) which caused the failure.
04	CANNOT PRESET TIME CODE P1, P2, R	The unit cannot preset time code because VCR time code switches are set to prevent it.	• Set VCR switches to allow the unit to preset time code. • Check to be sure that the VCR supports time code recording.
05	CANNOT READ TIME CODE P1, P2, R	Time code could not be read when the MARK IN or MARK OUT button in the TIME MARK section was pressed.	Check the time code selected under setup menu item 103 EDIT REFERENCE.
06	CANNOT RECORD	Recording did not start when the AUTO EDIT/END button or the REC button in the MANUAL CONTROL section was pressed.	• Check to be sure that the tape is not write inhibited. • Check to be sure that the VCR connected to the recorder connector on the connector panel supports recording as well as playback.
07	CANNOT SYNCHRONIZE P1, P2, R	The listed VCRs could not be synchronized at the specified precision.	Use setup menu item 104 SYNC GRADE to lower the synchronizing precision for the listed VCRs.
08	INAPPROPRIATE SETUP P1, P2, R	Conflicting data was entered in the setup menu.	Enter the data again, removing the conflict.
09	DURATION UNDEFINED (AUX)	An attempt was made to execute an edit without setting a duration for auxiliary source 1.	Set the duration for auxiliary source 1 (AUX).
10	EDIT MODE UNDEFINED	Edit execution was attempted without selecting an edit mode.	Select an edit mode.
11	IN POINT UNDEFINED P1, P2, R	Edit execution was attempted without defining a source IN point.	Define the IN point.
12	OUT POINT UNDEFINED P1, P2, R	An attempt was made to register an edit in the EDL without defining a recorder OUT point. Or edit execution was attempted using an invalid recorder OUT point.	Define a valid recorder OUT point.
13	EDIT NOT REGISTERED	In an edit recall operation, the specified edit could not be found in the EDL.	Specify a different edit number.

(Continued)

Error code	Error message	Meaning	Action to take
14	EDL MEMORY ERROR	The EDL may be corrupt.	Check the contents of the EDL.
		The backup battery for EDL memory is exhausted.	Leave the unit on for 30 minutes or longer to recharge the battery.
15	ERROR P1, P2, R	An invalid operation was attempted, or invalid data was entered.	Check the operation, or re-enter the data.
16	EDL COMM ERROR	An error occurred during communications with equipment connected to the EDL IN/OUT connector.	Check the external communications program to be sure that it is using the correct data transmission protocol *(see page 7-14)*.
17	INVALID FADE TIME	The fade in transition time is longer than the FROM source duration.	Reset the fade in transition time to a value shorter than the FROM source duration.
		The fade out transition time is longer than the TO source duration.	Reset the fade out transition time to a value shorter than the TO source duration.
18	INVALID SOURCE	An invalid source was specified.	Specify a valid source.
19	INVALID TRANS TIME	The effect transition time is longer than the TO source duration.	Reset the effect transition time to a value shorter than the TO source duration.
20	MEMORY FULL	An attempt was made to register an edit in the EDL when EDL memory was already full.	Transfer unneeded edits to external equipment, then delete them from the EDL.
21	ROM ERROR	A checksum error occurred in the system program.	There may be an error in system firmware. Contact a Sony service representative.
23	INAPPROPRIATE TIME DATA	An inappropriate value was entered for an IN point, OUT point or duration.	Enter an appropriate value.
24	CANNOT FIND CUE POINT P1, P2, R	The specified IN or OUT point could not be cued up when the GO TO button was pressed.	Set the IN or OUT point which you want to cue up.

In Case of Trouble

If any difficulty should arise during operation, first check the power and connections, then go through the following list. Should the difficulty persist, contact your Sony dealer or a Sony service representative.

Problem	Possible causes and remedies
No picture on the monitor.	• Make sure that the VCRs and monitors are turned on. • Check connections to external equipment[a] *(see "Connections", page 3-5).* • Make sure that the VCRs are in playback mode *(see "Controlling the VCRs", page 4-1).*
No signals from equipment connected to input connectors.	Check setup menu item 101 VIDEO INPUT SELECT. If you have connected a source to the VIDEO INPUT connectors, the setting should be V, for composite video signals. (The factory default setting is S-V, for S-video signals.)
The wrong video is shown on the monitor.	• Select the desired signals with the buttons in the VIDEO INPUT SELECT section. • Check video input connections[a].
The monitor shows only a grey background.	• Check that cassettes are loaded in the players. • A button in the VIDEO INPUT SELECT section may have selected a video input connector with no video input.
The monitor shows only a white or black background.	• If the BKGD button in the VIDEO INPUT SELECT section is lit, press to turn it off. • Press the BLK/WHT FADE button in the EFFECT TRANSITION section, turning it off. If the background is black, press the BLK/WHT FADE button only. If the background is white, press the BLK/WHT FADE button while pressing the SHIFT button.
Video quality is poor.	• After verifying that there is no problem with the tape, adjust the video with the knobs in the VIDEO LEVEL & HUE section *(see "Adjusting Video Signals", page 4-15).* • Verify that the posterization effect is off (the POSTRZ button in the INPUT EFFECT section is off). • Verify that the zoom effect is off (the ZOOM button in the INPUT EFFECT section is off). • Verify that mosaic is not being applied.
The wrong audio signals are heard.	• Select the right signals with the buttons in the AUDIO INPUT SELECT section. • Check audio input connections[a].
There is no input from the microphone.	If the AUX 2/MIC switch in the audio mixer section is set to AUX 2, set it to MIC.
There is no input from auxiliary source 2 .	If the AUX 2/MIC switch in the audio mixer section is set to MIC, set it to AUX 2.
Audio volume is too loud or too soft.	Adjust the volume *(see "Adjusting Audio Levels", page 4-17).*
The audio is distorted.	If the audio input connectors on this unit are connected to XLR 3-pin connectors on the audio equipment, set the 600 Ω termination switches to ON.
The video switches too quickly or too slowly.	Set the effect transition time *(see "Setting the Transition Time", page 5-61).*
The fader lever doesn't move.	Extinguish the AUTO TRANS/PAUSE button *(see "Note on the fader lever", page 4-13).*
The wrong mix type or wipe patterns are used.	If any unneeded buttons are lit in the MIX/EFFECT or WIPE PATTERN sections, press to turn them off.
How can I turn off the beep?	Set setup menu item 113 BEEP to OFF.
VCR cannot be controlled.	• Make sure that the VCR is turned on. • Check connections to the VCR[a] *(see "Connections", page 3-5).* • Check the current setting of setup menu item 102 REMOTE INTERFACE. • If the VCR's REMOTE/LOCAL switch is set to LOCAL, set it to REMOTE.
Nothing is shown in a time counter display.	• Make sure that the VCR is turned on. • Check connections to the VCR[a] *(see "Connections", page 3-5).* • If the VCR's REMOTE/LOCAL switch is set to LOCAL, set it to REMOTE.
Low-speed playback cannot be obtained on the consumer VCRs connected to the PLAYER 1/2 LANC connectors.	• Check that the connected VCRs can be used with this unit *(refer to "Player VCRs Connectable Over the LANC Interface", given on a sheet supplied with this unit).* • Execute the LEARN function to measure pinch-on delay *(see page 3-24).*

a) Check to be sure that all cables are firmly seated in the connectors.

(Continued)

Problem	Possible causes and remedies
Time counter display doesn't change.	The time counter does not change if time code or CTL signals are not recorded on the tape. Check by setting setup menu item 103 EDIT REFERENCE to CTL. If there is still no change in the time counter display, then there are no CTL signals recorded on the tape.
Auto edit or preview does not begin when the AUTO EDIT/END or PREVIEW button is pressed.	• The master tape cassette may be write inhibited. • Check connections to the VCRs[a] *(see "Connections", page 3-5).* • If the tape has played to the end, rewind it. • The VCR's input selection switch may be set incorrectly. • The VCR's NORMAL/EDIT switch may be set incorrectly. • In insert mode: — The wrong insert mode button may have been pressed *(see "Insert Mode", page 5-2).* — CTL signals must be recorded on the entire tape in order to conduct a preview or automatic edit. • In assemble mode: CTL signals must be recorded on the tape, at least around the first IN point. For a new tape, record black signals at the beginning of the tape *(see "Executing a first edit", page 5-7).* • Consult your VCR manuals if the VCR's AUTO OFF indicator is flashing.
In a preview or automatic edit, the actual edit points are not the ones I set.	• When using CTL time data to set edit points, you may have reset a time counter by pressing the RESET button on a counter display panel. • Depending on the VCR, the actual edit points may differ slightly from those set with this unit. Adjust using the TRIM– (=SHIFT + IN) and TRIM+ (=SHIFT + OUT) buttons *(see "Changing edit points" page 5-22).*
There is picture breakup between edits.	• There may be a break in CTL signals between the edits. • Using the REC button causes breakup in the picture after an edit. Connect edits using the AUTO EDIT/END button.
There are stripes on the monitor screen.	Guard band noise is sometimes seen during playback at speeds other than +1 times normal speed. This is not a malfunction.
The picture is unstable.	• There may be noise in the input signals from the VCR. Check by selecting another VCR. The picture may also be unstable if CTL signals on the tape are noisy or irregular. • Recorder video may be unstable when a search (high-speed playback) is carried out on a player. Stop the player, or put it into normal-speed playback mode. • The VCR may not be receiving the correct input of reference video or sync signals.
The picture drifts vertically.	Check the position of the monitor's vertical sync control.
The setup menu does not appear, even though the MENU indicator in the SCREEN section is lit.	Press the search dial to put it into the jog (depressed) position.
Vertical lines appear in the picture when the zoom input effect is used.	Vertical lines sometimes appear during zoom playback, depending on the capability of the VCR. This is not a malfunction.

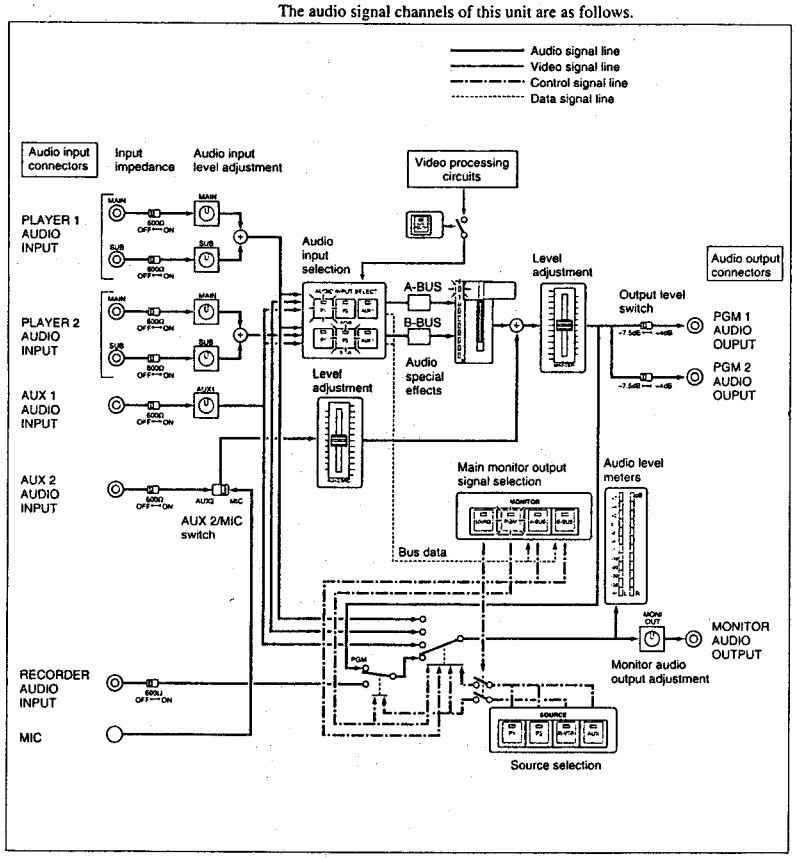
a) Check to be sure that all cables are firmly seated in the connectors.

Audio Signal Flow

The illustrations in this section show the flow of audio signals when program and source signal channels are selected for output.

Audio signal channels

The audio signal channels of this unit are as follows.



Audio signal channels

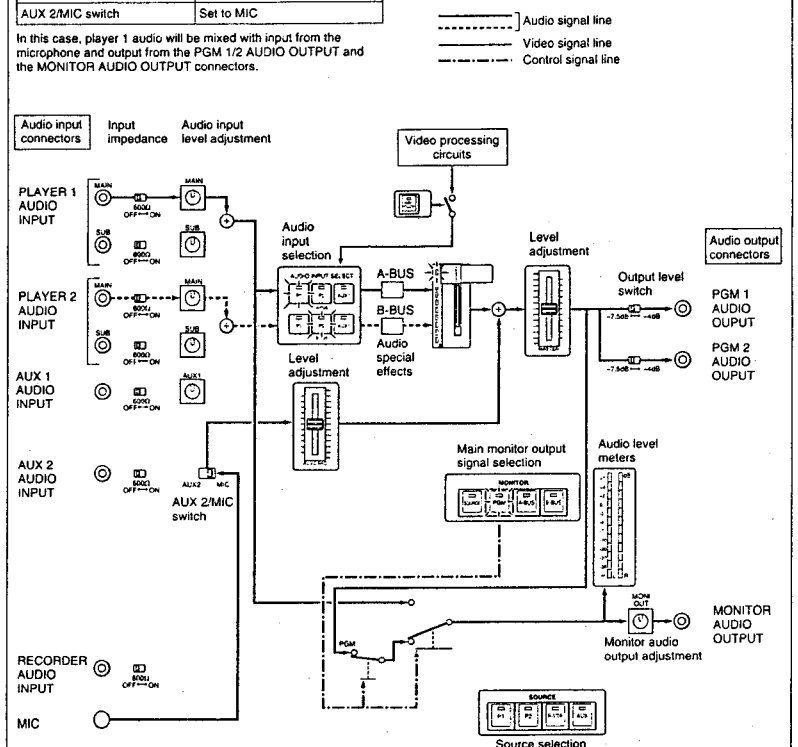
Flow of program and source audio

Example 1: When program audio is selected for output to the main monitor

The thick line (——) and thick broken lines (- - -) show the flow of audio signals when audio controls are set as follows.

AUDIO INPUT SELECT section	A-BUS row: P1 button is lit
	B-BUS row: P2 button is lit
AUDIO FOLLOW button	Off
Fader lever	Pushed all the way to side A
Transition indicators	Only one lit on side A
MONITOR section	PGM button is lit
AUX 2/MIC switch	Set to MIC

In this case, player 1 audio will be mixed with input from the microphone and output from the PGM 1/2 AUDIO OUTPUT and the MONITOR AUDIO OUTPUT connectors.



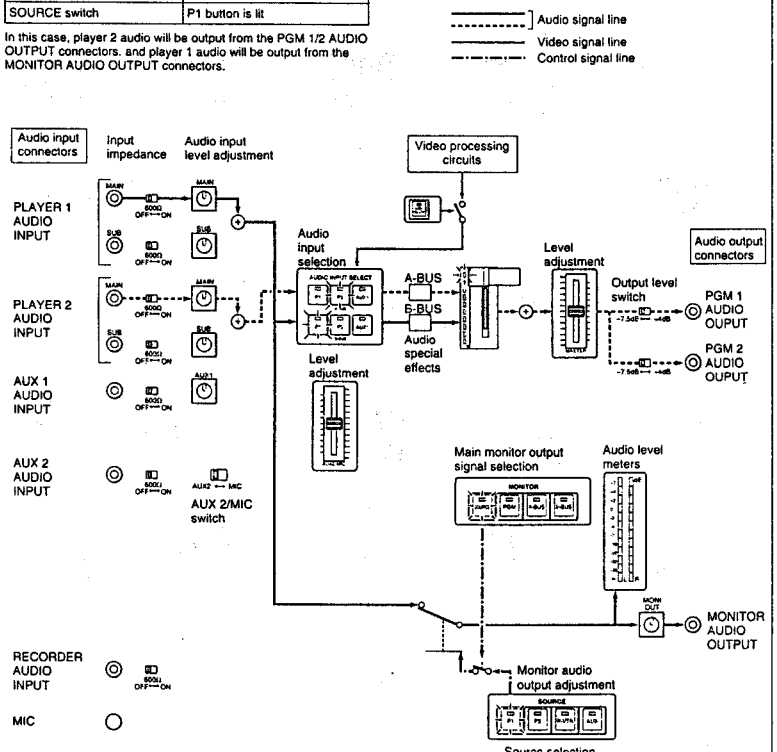
Audio signal flow when program audio is selected for output to the main monitor

Example 2: When source audio is selected for output to the main monitor

The thick line (——) and thick broken lines (- - -) show the flow of audio signals when audio controls are set as follows.

AUDIO INPUT SELECT section	A-BUS row: P2 button is lit
	B-BUS row: P1 button is lit
AUDIO FOLLOW button	Off
Fader lever	Pushed all the way to side A
Transition indicators	Only one lit on side A
MONITOR section	SOURCE button is lit
SOURCE switch	P1 button is lit

In this case, player 2 audio will be output from the PGM 1/2 AUDIO OUTPUT connectors. and player 1 audio will be output from the MONITOR AUDIO OUTPUT connectors.

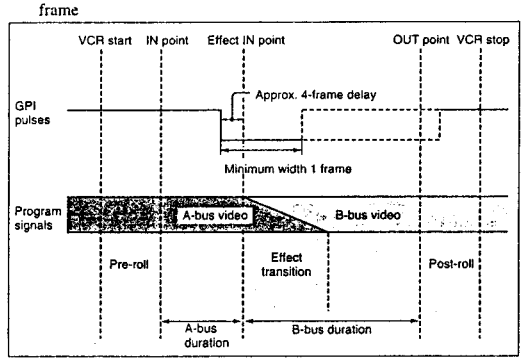


Audio signal flow when source audio is selected for output to the main monitor

GPI Interface Effect Timing

This unit's GPI interface allows you to use external devices to control the timing of effect transitions between A-bus and B-bus source signals. However, there is a delay of approximately 4 frames between the time when an external device issues a GPI pulse and the time when the effect transition begins. If you need precise control over effect timing, refer to following illustration and adjust the timing of GPI pulses on the external device side.

GPI pulse specifications: TTL LOW level, minimum pulse width 1 frame



GPI interface effect timing

Wipe Patterns

The wipe patterns which can be assigned to the USER1 to USER4 buttons in the WIPE PATTERN section are shown below.

For more information about assigning wipe patterns to the user buttons, see "Assigning wipe patterns to the USER1 to USER4 buttons" (page 5-42).

Pattern transitions

Arrows show wipe directions. In a transition from bus A to bus B, the wipe replaces bus-A video (white portion) with bus-B video (black portion) in the directions shown by the arrows.

Basic patterns 1

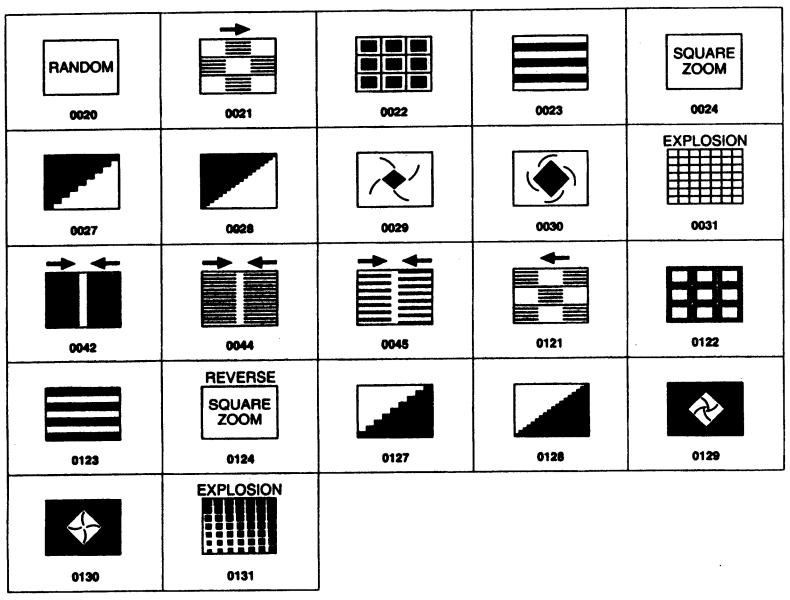
0001	0002	0003	0004	0005
0006	0007	0008	0009	0010
0011	0012	0013	0014	0015
0016	0017	0018	0019	0105
0106	0107	0109	0110	0111
0112	0113	0114	0115	0116

(Continued)

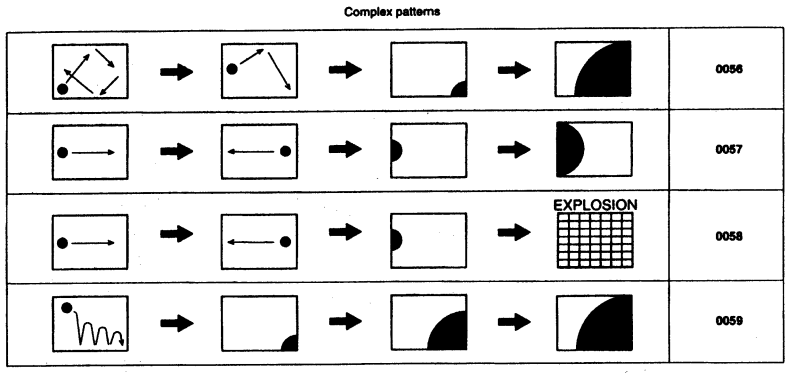
Basic patterns 1 (Continued)

0117	0118	0119	0103	1018
1019	1118	1119	2018	2019
2118	2119	3018	3019	3118
3119	4018	4019	4118	4119
5018	6018	7018	8018	

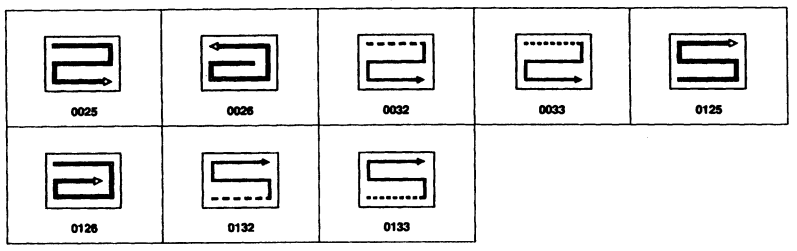
Basic patterns 2



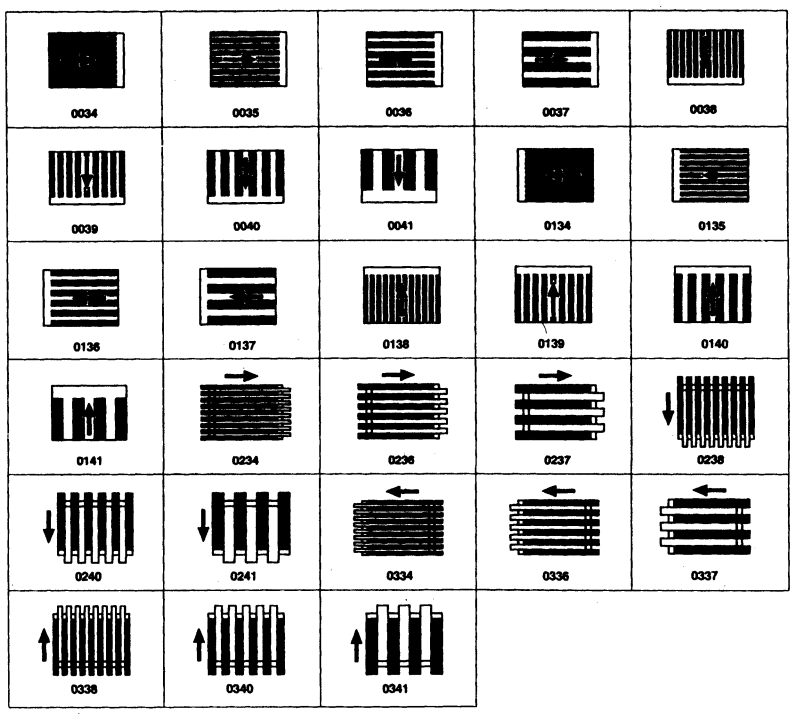
Complex patterns



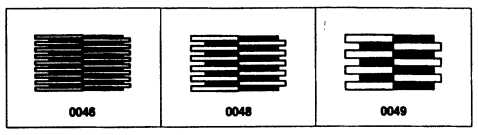
Matrix patterns



Split slide patterns



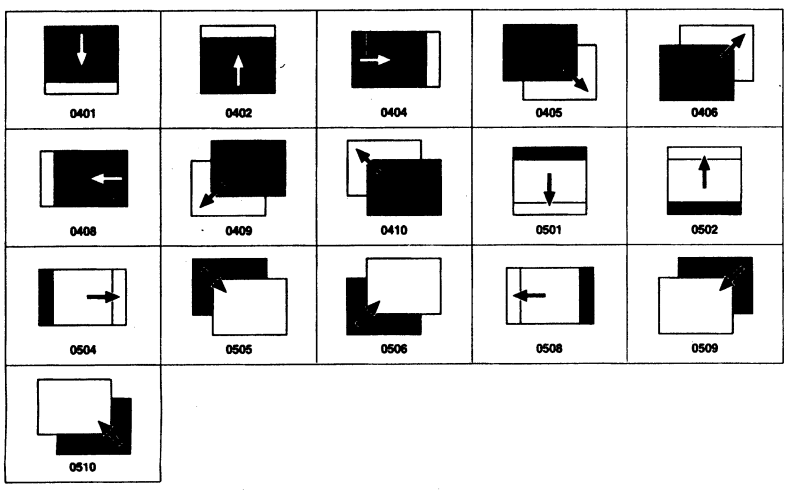
Interborder split patterns



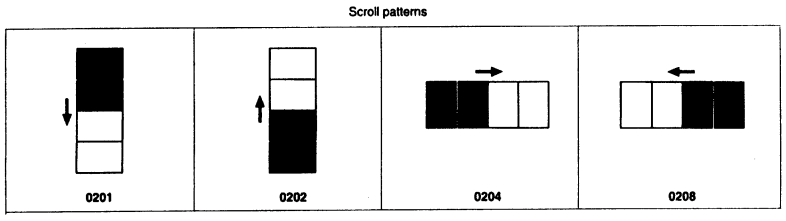
Note

When combining interborder split patterns with input effects, select the same input effects for bus A and bus B.

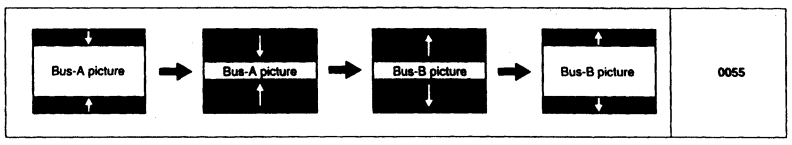
Slide patterns



Scroll patterns



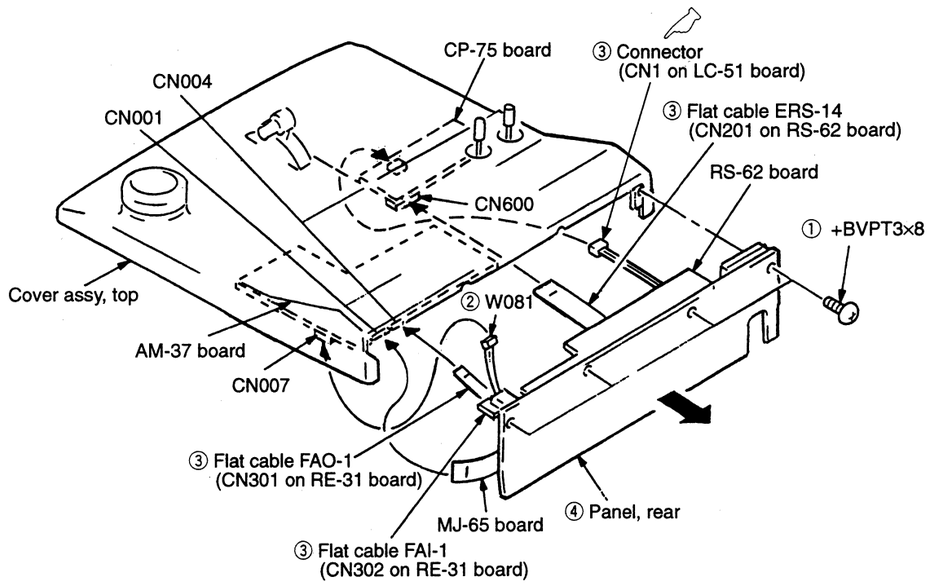
Shutter wipe



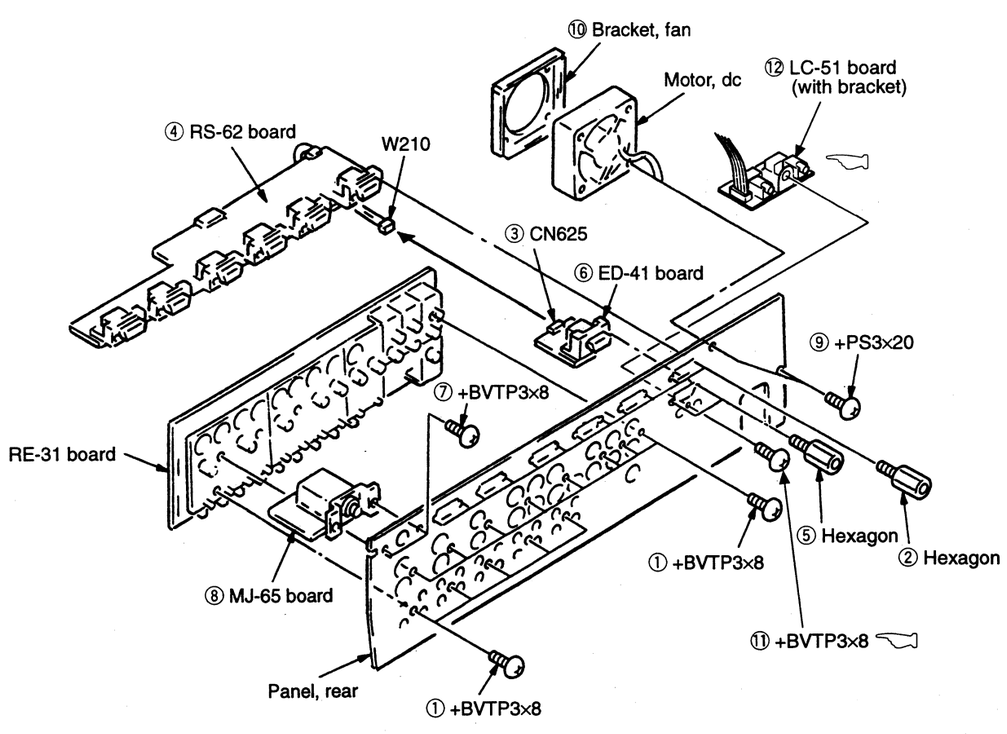
SECTION 2
DISASSEMBLY

Page 2-2

2. REMOVAL OF REAR PANEL

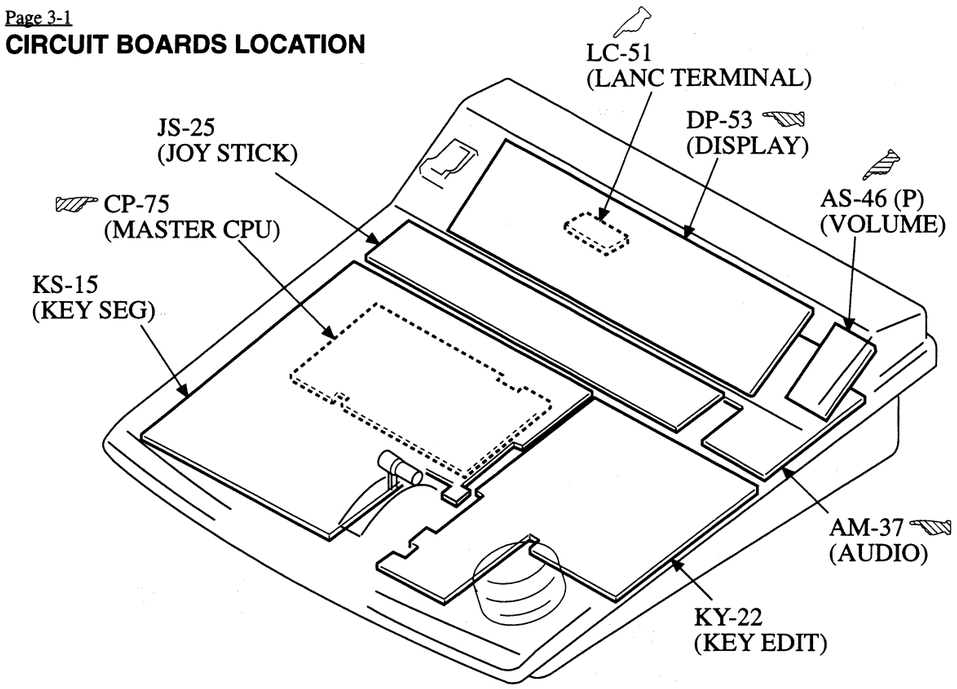


3. REMOVAL OF RE-31, RS-62, ED-41, MJ-65 BOARDS AND DC MOTOR

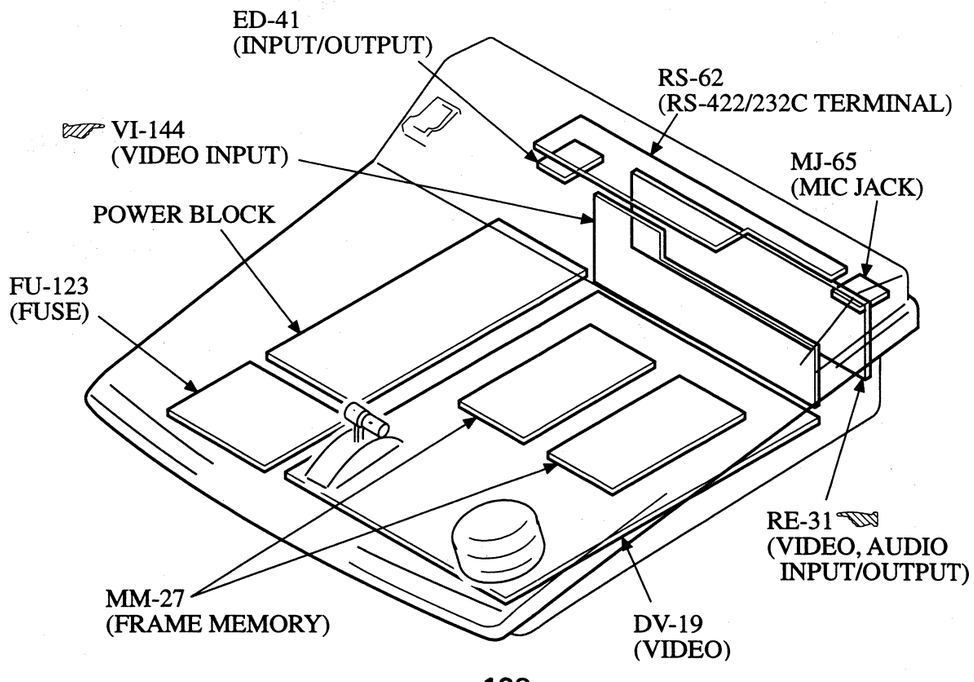


Page 3-1

CIRCUIT BOARDS LOCATION

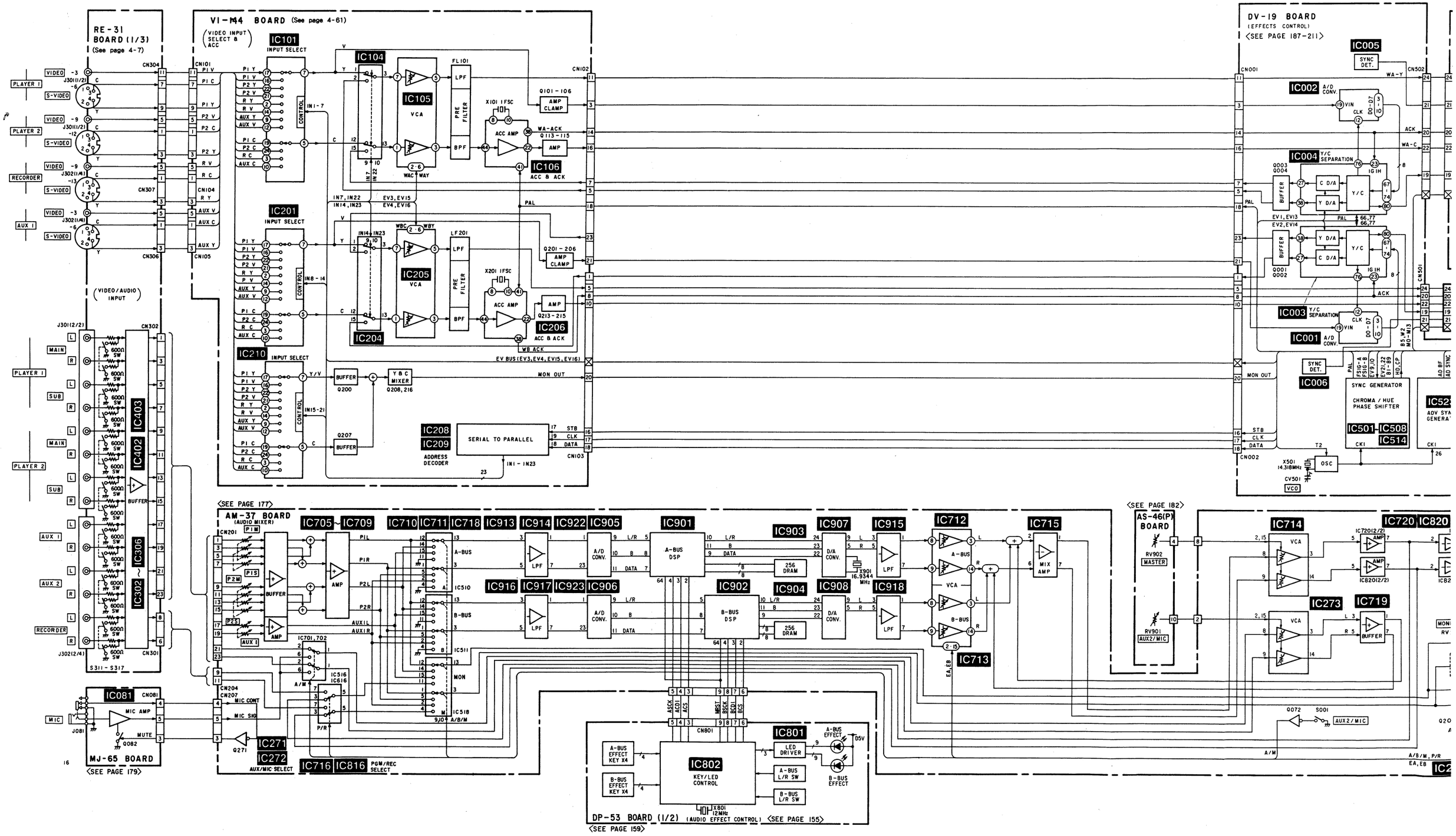


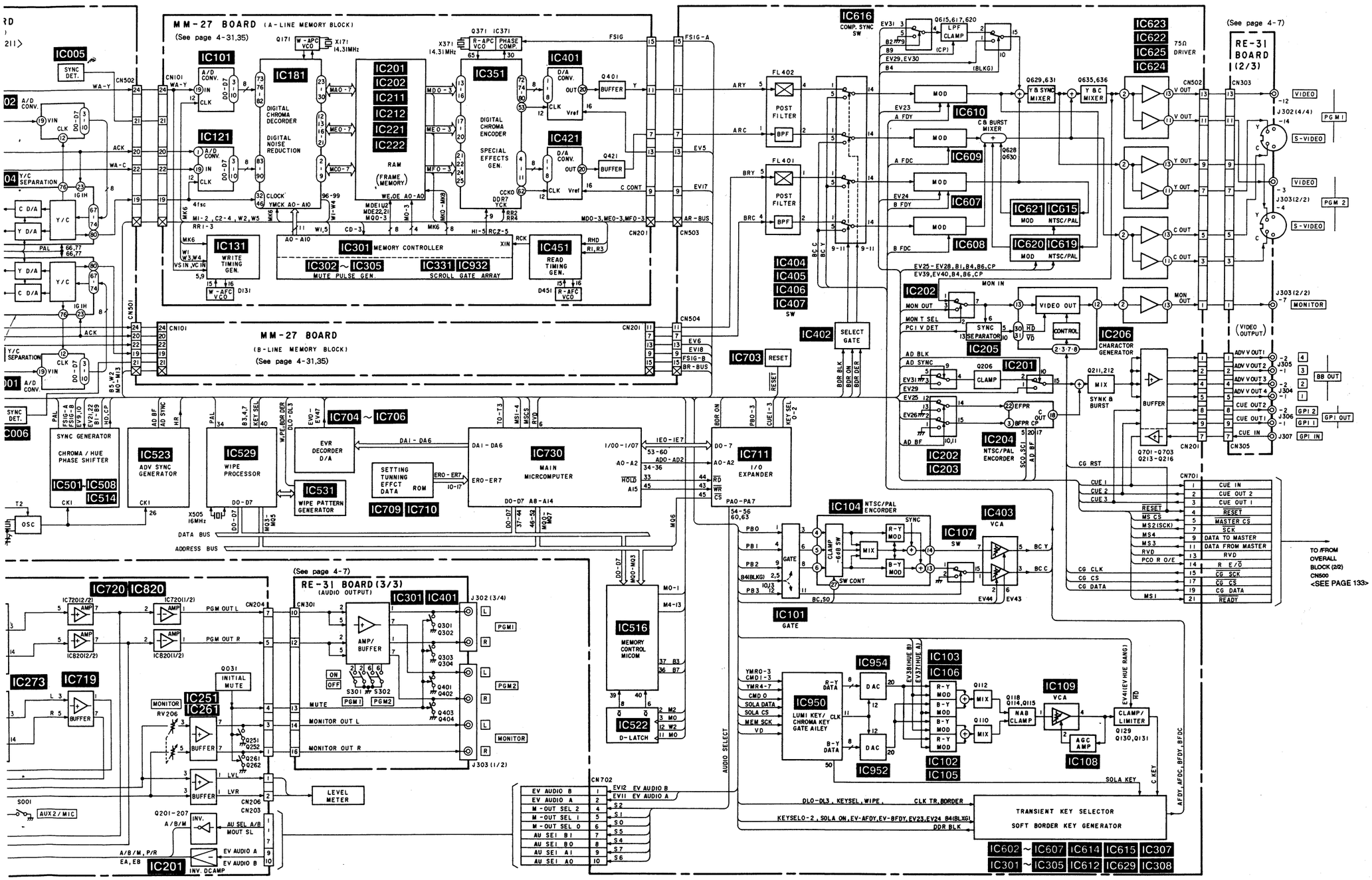
: Points added parts
: Points deleted parts
: Points changed parts



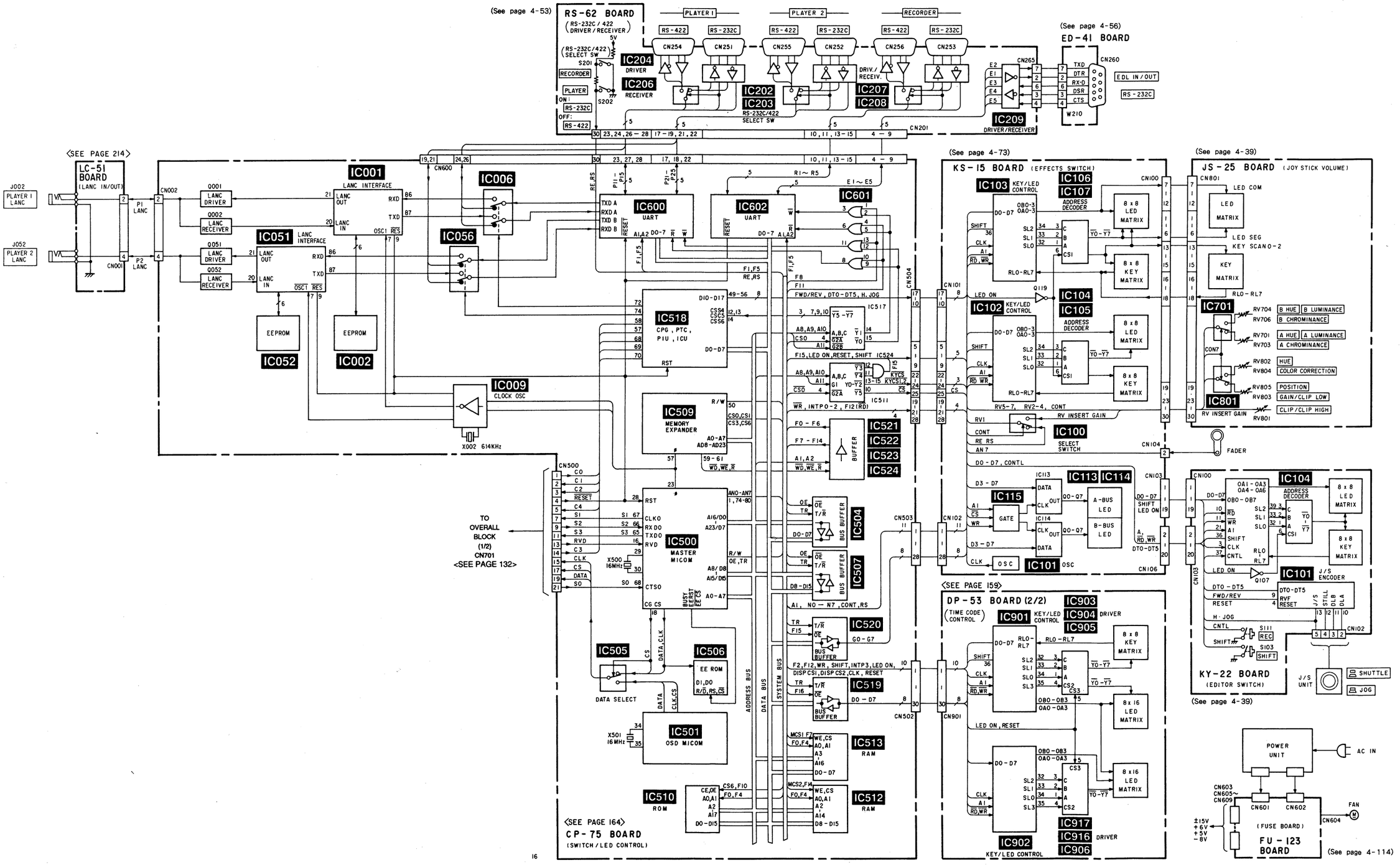
SECTION 3
BLOCK DIAGRAMS

3-1. OVERALL BLOCK DIAGRAM (1)

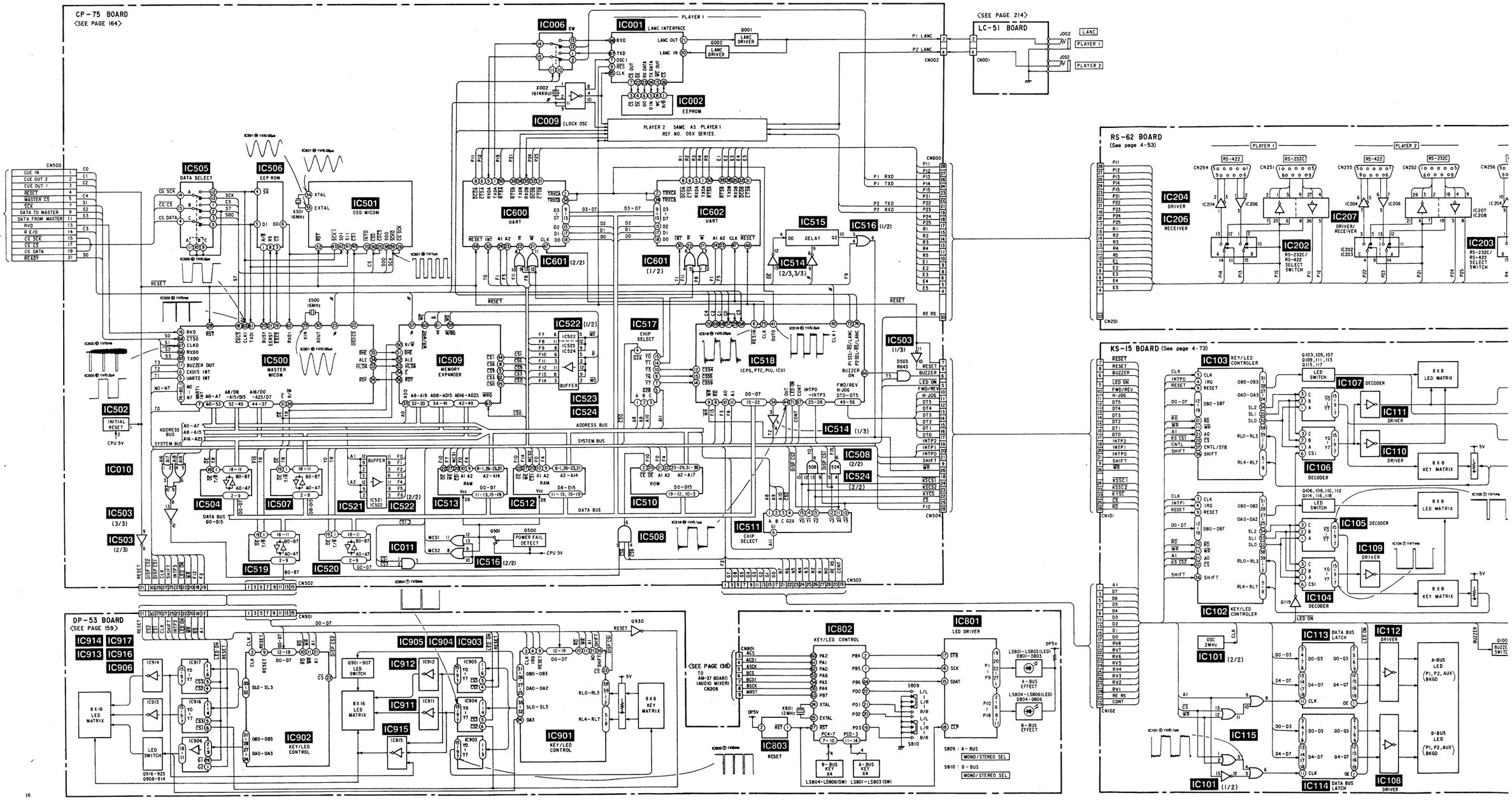


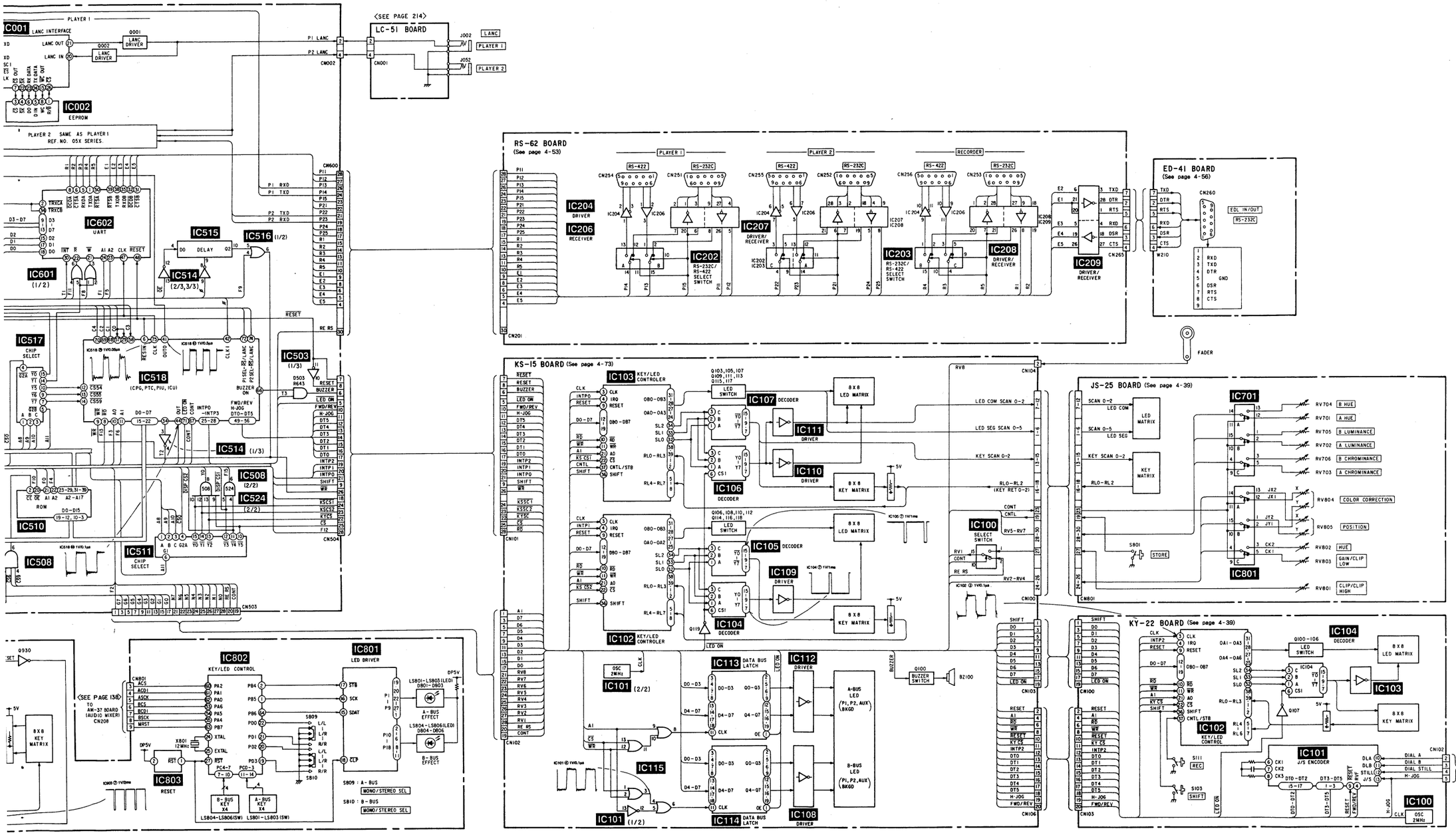

MM-27 BOARD (A-LINE MEMORY BLOCK)
(See page 4-31,35)
IC101
IC121
IC181
DIGITAL CHROMA DECORDER
DIGITAL NOISE REDUCTION
IC201 IC202 IC211 IC212 IC221 IC222
RAM (FRAME MEMORY)
IC351
DIGITAL CHROMA ENCODER
SPECIAL EFFECTS GEN.
IC401
IC421
IC131 WRITE TIMING GEN.
IC301 MEMORY CONTROLLER
IC302 ~ IC305 MUTE PULSE GEN.
IC331 IC932 SCROLL GATE ARRAY
IC451 READ TIMING GEN.
MM-27 BOARD
(B-LINE MEMORY BLOCK)
(See page 4-31,35)
IC005 SYNC DET.
IC006
IC501-IC508 IC514
SYNC GENERATOR
CHROMA / HUE PHASE SHIFTER
IC523 ADV SYNC GENERATOR
IC529 WIPE PROCESSOR
IC531 WIPE PATTERN GENERATOR
IC704 ~ IC706
EVR DECORDER D/A
IC730 MAIN MICRCOMPUTER
IC709 IC710
SETTING TUNNING EFFCT DATA ROM
IC711 I/O EXPANDER
DATA BUS
ADDRESS BUS
IC616 COMP. SYNC SW
IC610 IC609 IC607 IC608
MOD
IC621 IC615 MOD NTSC/PAL
IC620 IC619 MOD NTSC/PAL
C & BURST MIXER
Y & SYNC MIXER
Y & C MIXER
IC623 IC622 IC625 IC624
75Ω DRIVER
FL402 POST FILTER BPF
FL401 POST FILTER BPF
IC404 IC405 IC406 IC407 SW
IC402 SELECT GATE
IC703 RESET
IC202 CHARACTOR GENERATOR
IC205 SYNC SEPARATOR
IC201 CLAMP
IC204 NTSC/PAL ENCORDER
IC202 IC203
Q211,212 MIX
SYNK & BURST
BUFFER
Q701-Q703 Q213-Q216
(See page 4-7)
RE-31 BOARD (2/3)
VIDEO
S-VIDEO
PGM 1
PGM 2
MONITOR
(VIDEO OUTPUT)
BB OUT
GPI OUT
GPI IN
CUE IN
CUE OUT 1
CUE OUT 2
CG RST
CG CLK
CG CS
CG DATA
READY
TO /FROM OVERALL BLOCK (2/2) CN500 <SEE PAGE 133>
IC104 NTSC/PAL ENCORDER
IC403 VCA
IC107 SW
IC101 GATE
IC516 MEMORY CONTROL MICOM
IC522 D-LATCH
IC720 IC820
(See page 4-7)
RE-31 BOARD (3/3) (AUDIO OUTPUT)
IC301 IC401
PGM1
PGM2
MONITOR
IC273 IC719
IC251 IC261
INITIAL MUTE
LEVEL METER
IC201 INV. DCAMP
IC954 IC103 IC106
IC950 LUMI KEY/ CHROMA KEY GATE AILEY
IC952 IC102 IC105
IC109 VCA
IC108 AGC AMP
CLAMP/ LIMITER
NAB CLAMP
TRANSIENT KEY SELECTOR
SOFT BORDER KEY GENERATOR
IC602 ~ IC607 IC614 IC615 IC307
IC301 ~ IC305 IC612 IC629 IC308

3-2. OVERALL BLOCK DIAGRAM (2)

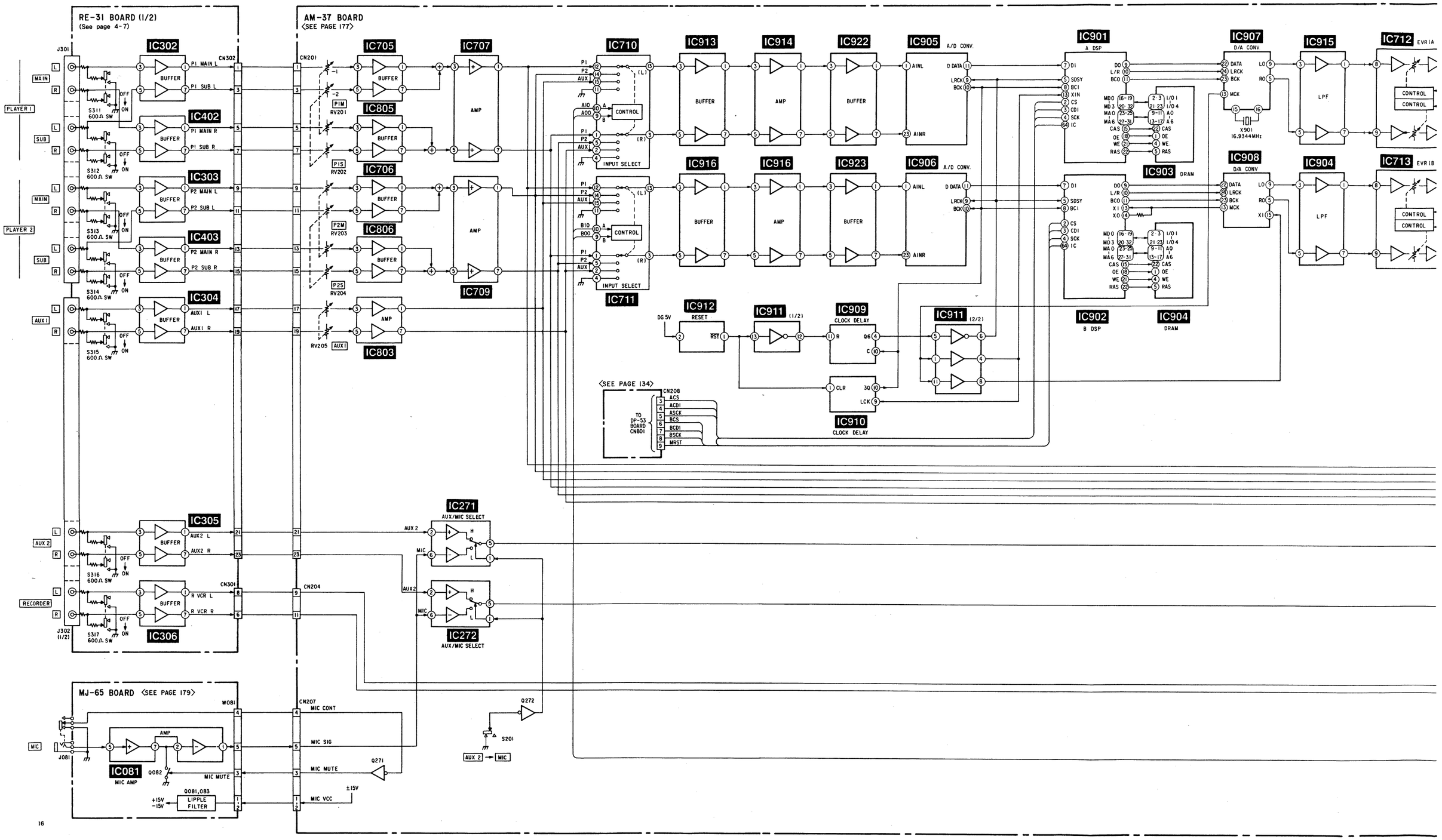


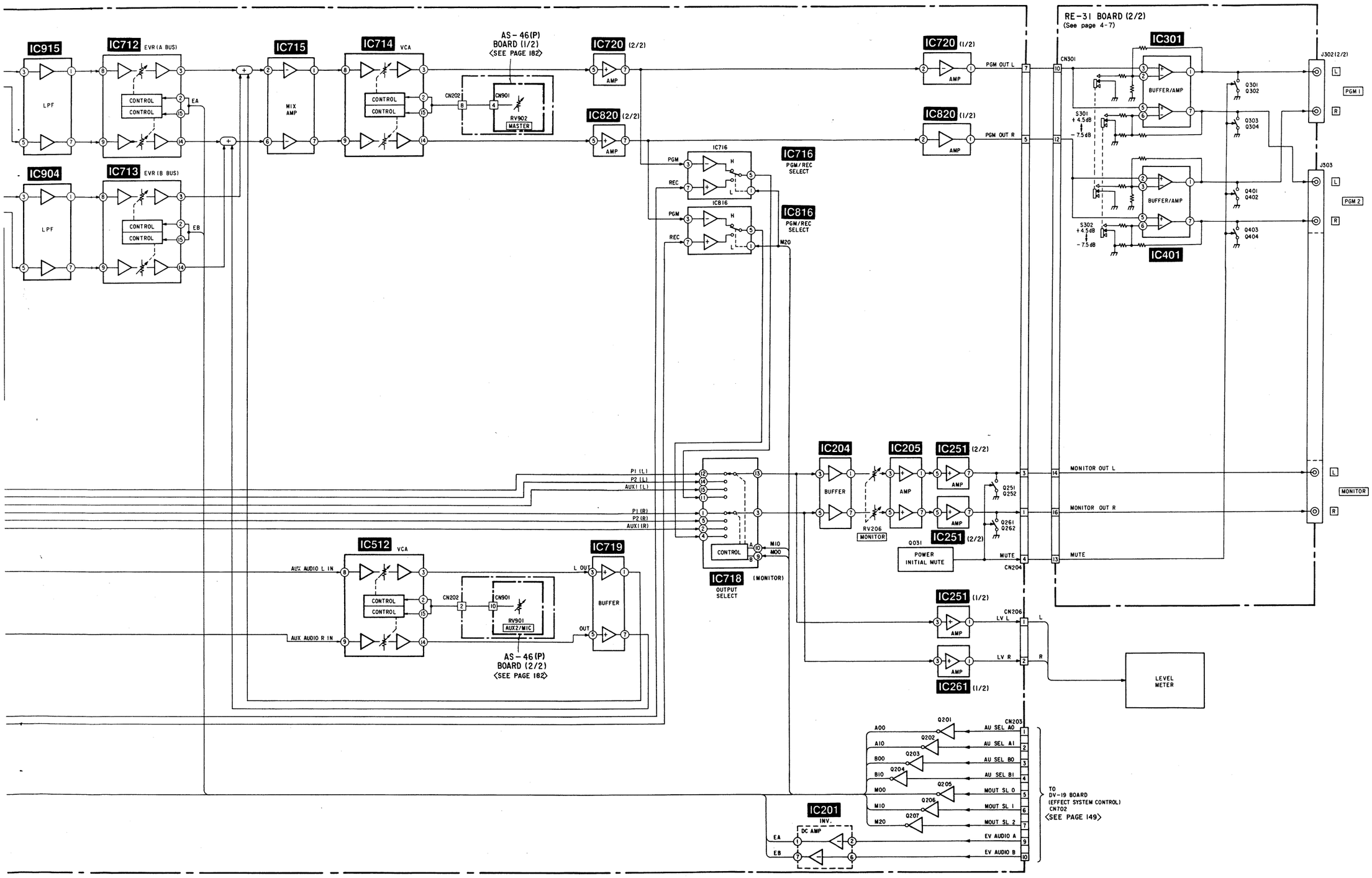
3-3. EDITOR BLOCK DIAGRAM



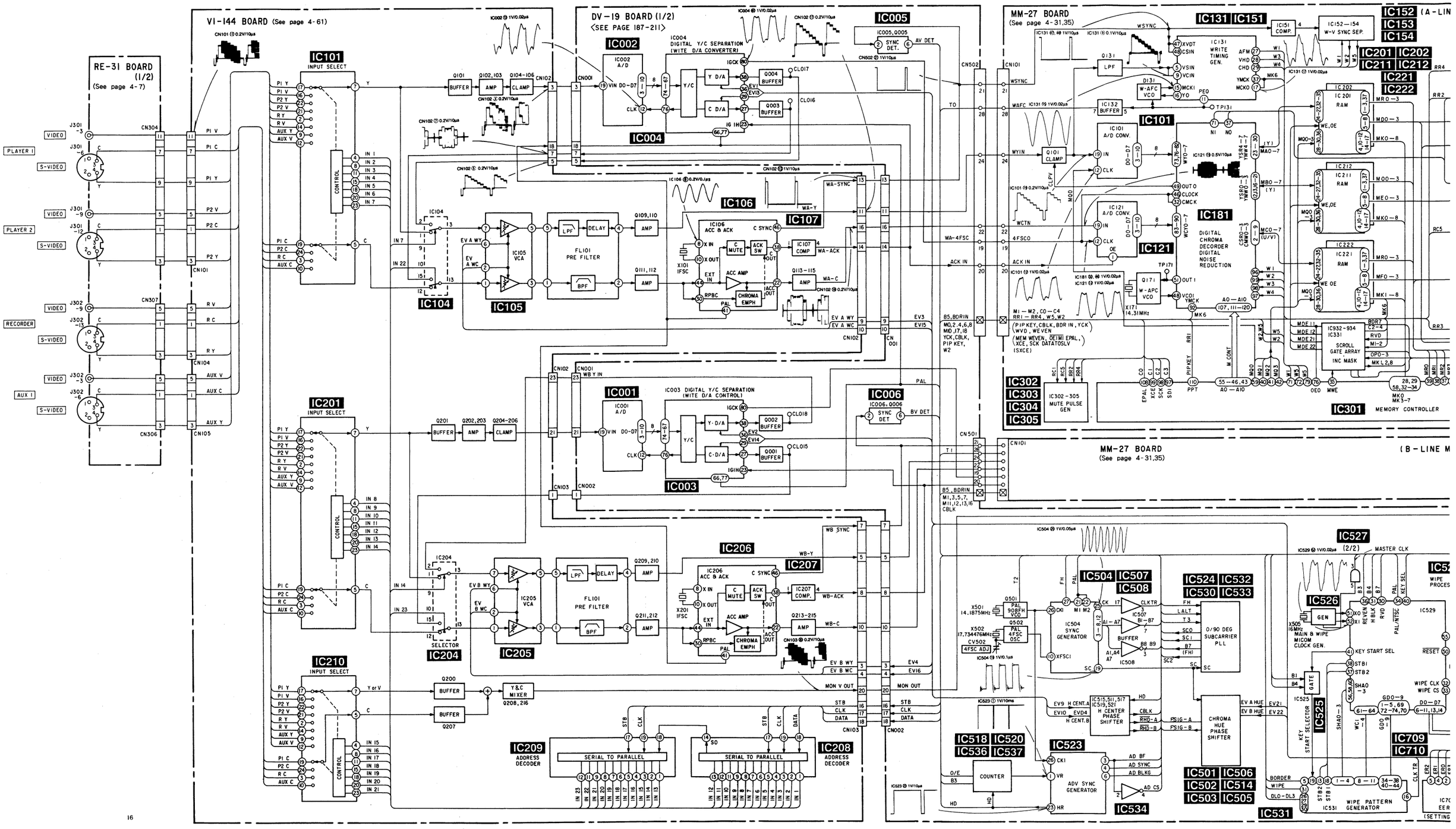

IC001
LANC INTERFACE
PLAYER 1
LANC DRIVER
IC002
EEPROM
PLAYER 2 SAME AS PLAYER1
REF. NO. 05X SERIES.
<SEE PAGE 214>
LC-51 BOARD
LANC
PLAYER 1
PLAYER 2
RS-62 BOARD
(See page 4-53)
IC204 DRIVER
IC206 RECEIVER
IC207 DRIVER/RECEIVER
IC202 RS-232C/RS-422 SELECT SWITCH
IC203 RS-232C/RS-422 SELECT SWITCH
IC208 DRIVER/RECEIVER
IC209 DRIVER/RECEIVER
ED-41 BOARD
(See page 4-56)
EDL IN/OUT
RS-232C
IC602 UART
IC601 (1/2)
IC515 DELAY
IC516 (1/2)
IC514 (2/3,3/3)
IC517 CHIP SELECT
IC518 (CPG, PTC, PIU, ICU)
IC503 (1/3)
IC514 (1/3)
IC508 (2/2)
IC524 (2/2)
IC510 ROM
IC511 CHIP SELECT
IC508
FADER
KS-15 BOARD (See page 4-73)
IC103 KEY/LED CONTROLER
IC107 DECODER
IC111 DRIVER
IC110 DRIVER
IC106 DECODER
IC105 DECODER
IC109 DRIVER
IC104 DECODER
IC102 KEY/LED CONTROLER
8 X 8 LED MATRIX
8 X 8 KEY MATRIX
IC100 SELECT SWITCH
JS-25 BOARD (See page 4-39)
LED MATRIX
KEY MATRIX
IC701
IC801
RV704 B HUE
RV701 A HUE
RV705 B LUMINANCE
RV702 A LUMINANCE
RV706 B CHROMINANCE
RV703 A CHROMINANCE
RV804 COLOR CORRECTION
RV805 POSITION
RV802 HUE
RV803 GAIN/CLIP LOW
RV801 CLIP/CLIP HIGH
S801 STORE
IC802 KEY/LED CONTROL
IC801 LED DRIVER
IC803 RESET
<SEE PAGE 138>
TO AM-37 BOARD (AUDIO MIXER) CN208
IC101 (2/2)
IC113 DATA BUS LATCH
IC114 DATA BUS LATCH
IC112 DRIVER
IC108 DRIVER
IC115
IC101 (1/2)
A-BUS LED (PI, P2, AUX, BKGD)
B-BUS LED (PI, P2, AUX, BKGD)
BUZZER SWITCH
KY-22 BOARD (See page 4-39)
IC104 DECODER
IC103
IC102 KEY/LED CONTROL
IC101 J/S ENCODER
J/S UNIT
SHUTTLE
JOG

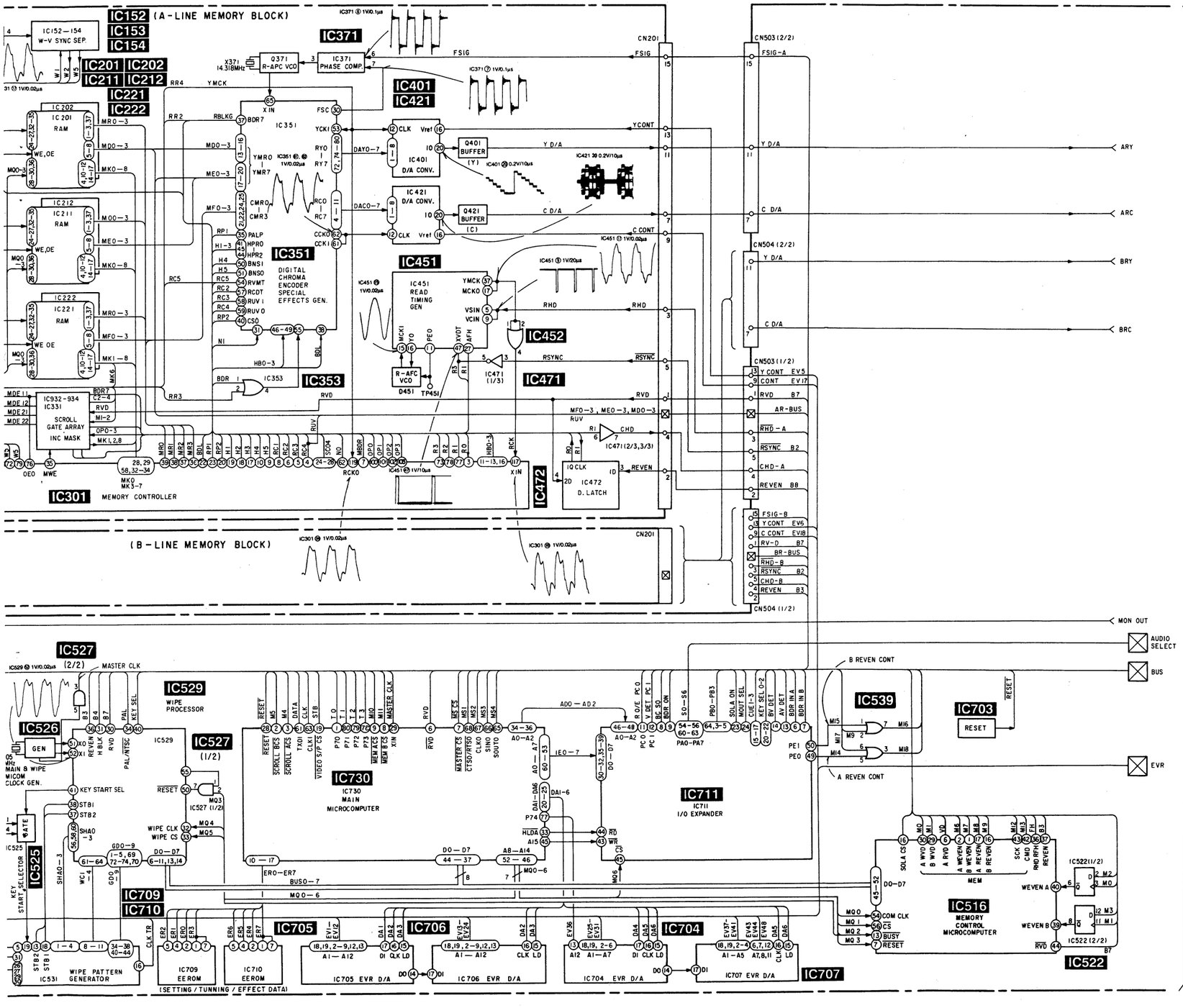
3-4. AUDIO BLOCK DIAGRAM



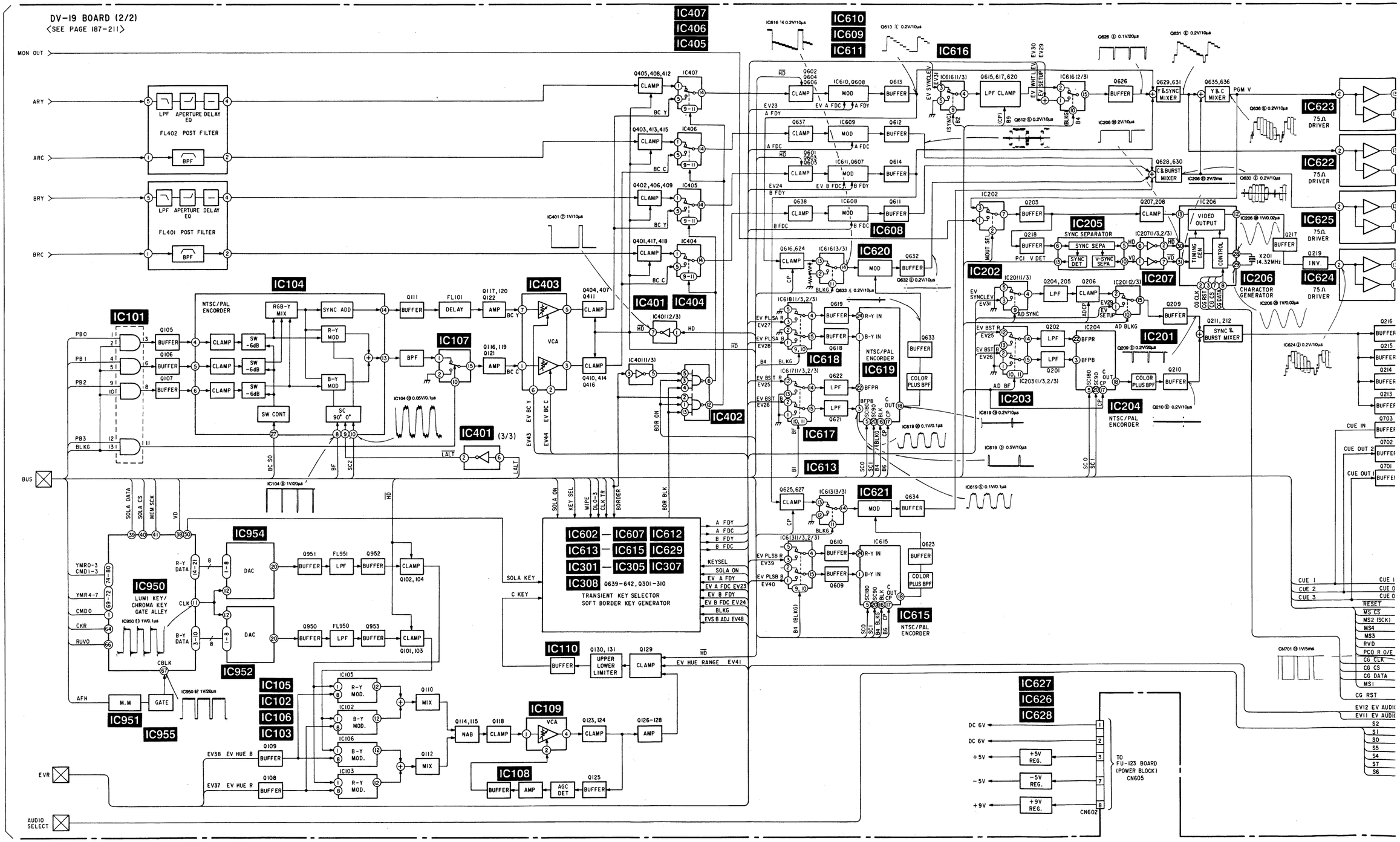

IC915
IC712 EVR (A BUS)
IC715
IC714 VCA
AS-46(P) BOARD (1/2) <SEE PAGE 182>
IC720 (2/2)
IC720 (1/2)
RE-31 BOARD (2/2) (See page 4-7)
IC301
J302 (2/2)
LPF
CONTROL
CONTROL
EA
MIX AMP
CN202
CN901
RV902
MASTER
AMP
PGM OUT L
CN301
BUFFER/AMP
Q301 Q302
PGM 1
IC820 (2/2)
IC820 (1/2)
PGM OUT R
S301 +4.5dB -7.5dB
Q303 Q304
IC904
IC713 EVR (B BUS)
EB
IC716
PGM/REC SELECT
IC816
PGM
REC
H
L
M20
J503
Q401 Q402
PGM 2
S302 +4.5dB -7.5dB
Q403 Q404
IC401
P1 (L)
P2 (L)
AUX1 (L)
P1 (R)
P2 (R)
AUX1 (R)
IC204
IC205
IC251 (2/2)
BUFFER
RV206 MONITOR
Q251 Q252
Q261 Q262
MONITOR OUT L
MONITOR OUT R
MUTE
CN204
IC718 OUTPUT SELECT
M10
M00
(MONITOR)
Q031
POWER INITIAL MUTE
IC512 VCA
AUX AUDIO L IN
AUX AUDIO R IN
IC719
L OUT
OUT
BUFFER
RV901 AUX2/MIC
AS-46(P) BOARD (2/2) <SEE PAGE 182>
IC251 (1/2)
CN206
LV L
LV R
L
R
LEVEL METER
IC261 (1/2)
Q201
CN203
A00
A10
B00
B10
M00
M10
M20
Q202
Q203
Q204
Q205
Q206
Q207
AU SEL A0
AU SEL A1
AU SEL B0
AU SEL B1
MOUT SL 0
MOUT SL 1
MOUT SL 2
EV AUDIO A
EV AUDIO B
TO DV-19 BOARD (EFFECT SYSTEM CONTROL) CN702 <SEE PAGE 149>
IC201 INV. DC AMP
EA
EB

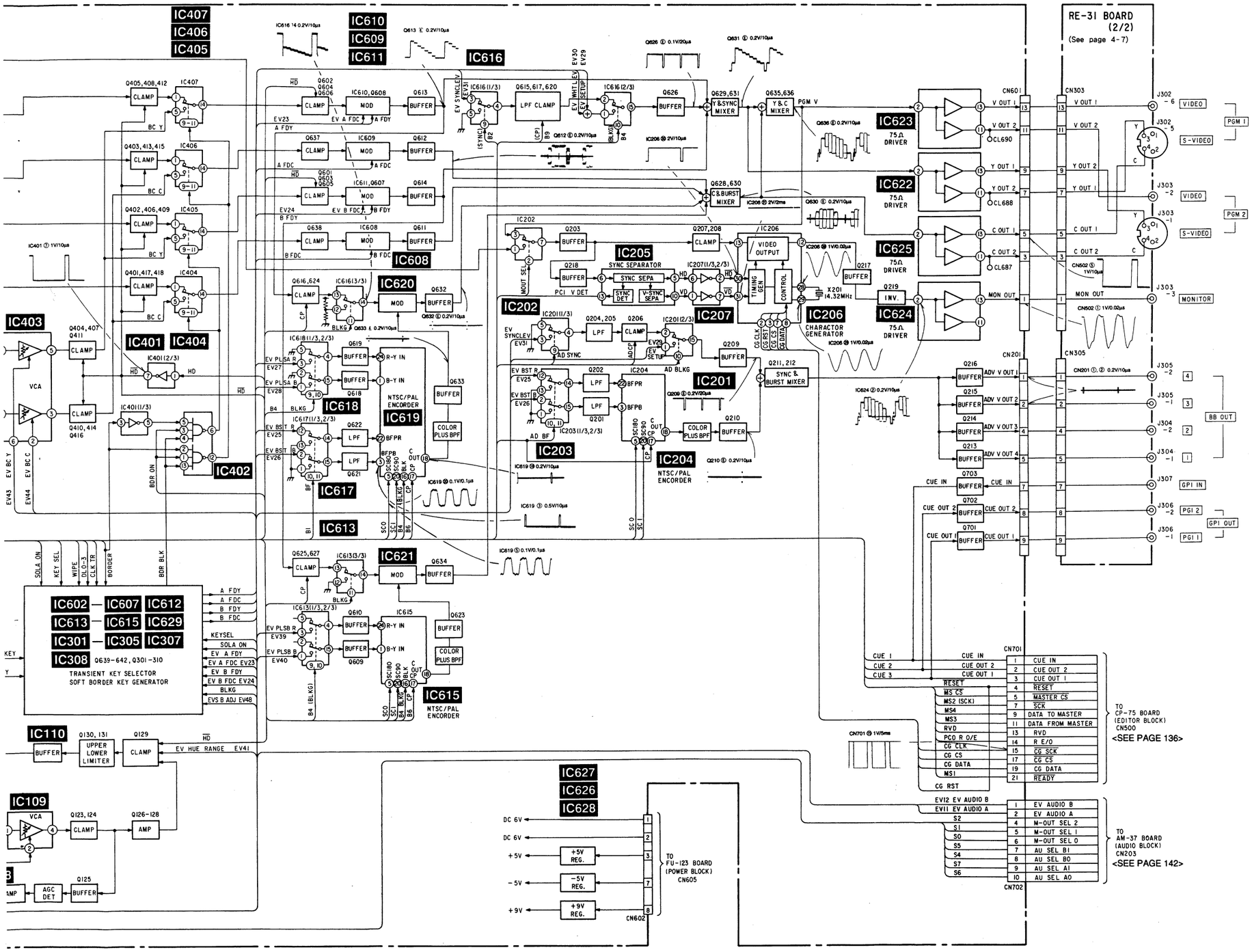
3-5. SWITCHER BLOCK DIAGRAM (1)



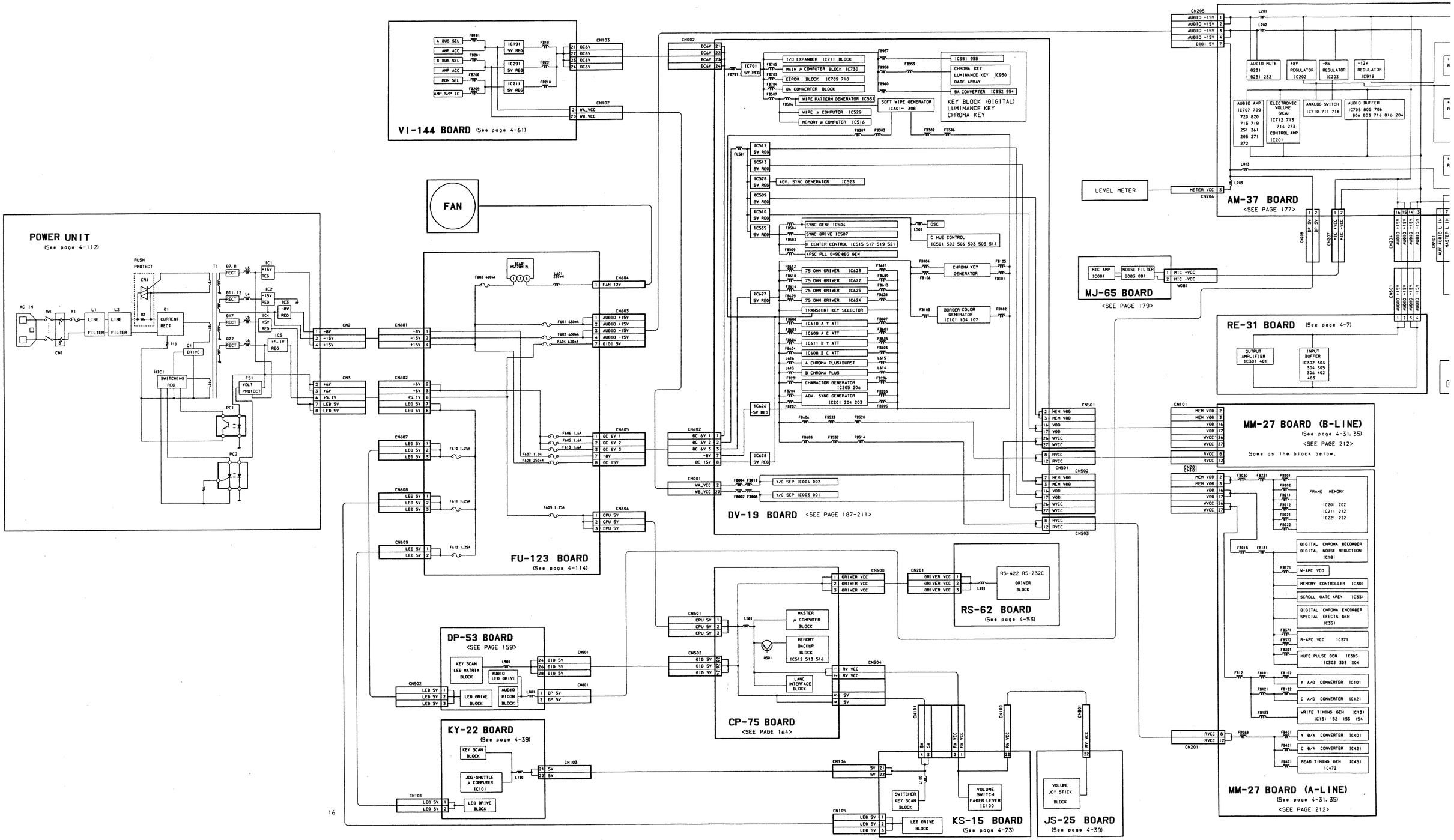

IC152 (A-LINE MEMORY BLOCK)
IC152
IC153
IC154
IC152—154 W-V SYNC SEP.
IC201 IC202
IC211 IC212
IC221
IC222
IC371
X371 14.318MHz
Q371 R-APC VCO
IC371 PHASE COMP.
FSIG
YMCK
IC401
IC421
IC202
IC201 RAM
IC212
IC211 RAM
IC222
IC221 RAM
WE,OE
IC351
DIGITAL CHROMA ENCODER SPECIAL EFFECTS GEN.
IC401 D/A CONV.
IC421 D/A CONV.
Q401 BUFFER (Y)
Q421 BUFFER (C)
Y D/A
C D/A
YCONT
CCONT
IC451
IC451 READ TIMING GEN
R-AFC VCO
D451
TP451
IC452
IC471
IC471 (1/3)
IC471(2/3,3/3)
IC353
IC301
MEMORY CONTROLLER
IC932-934 IC331
SCROLL GATE ARRAY INC MASK
IC472
D. LATCH
IC472
(B-LINE MEMORY BLOCK)
CN201
CN503(2/2)
CN504(2/2)
CN503(1/2)
CN504(1/2)
FSIG-A
Y D/A
C D/A
Y CONT EV5
CONT EV17
RVD B7
AR-BUS
RHD-A
RSYNC B2
CHD-A
REVEN B8
FSIG-B
Y CONT EV6
C CONT EV18
RV-D B7
BR-BUS
RHD-B
RSYNC B2
CHD-B
REVEN B3
ARY
ARC
BRY
BRC
TO SWITCHER BLOCK (2/2)
<SEE PAGE 147>
IC527 (2/2)
MASTER CLK
IC529 WIPE PROCESSOR
IC526
GEN
IC527 (1/2)
IC730 MAIN MICROCOMPUTER
IC711 I/O EXPANDER
IC539
IC703
RESET
B REVEN CONT
A REVEN CONT
MON OUT
AUDIO SELECT
BUS
EVR
IC525
KEY START SELECTOR
IC709
IC710
IC705
IC706
IC704
IC707
IC516 MEMORY CONTROL MICROCOMPUTER
IC522(1/2)
IC522(2/2)
IC531 WIPE PATTERN GENERATOR
IC709 EEROM
IC710 EEROM
(SETTING / TUNNING / EFFECT DATA)
IC705 EVR D/A
IC706 EVR D/A
IC704 EVR D/A
IC707 EVR D/A

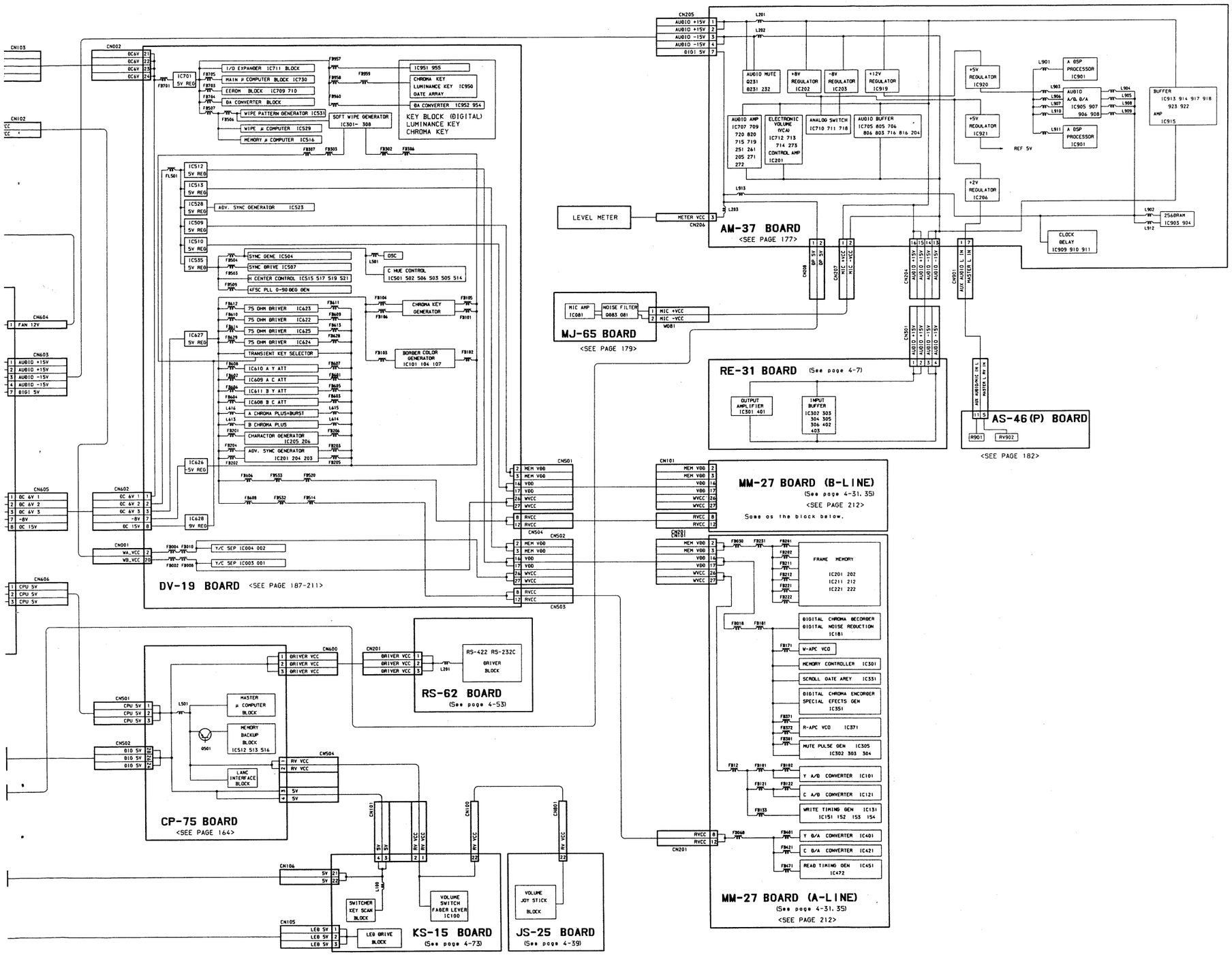
3-6. SWITCHER BLOCK DIAGRAM (2)




IC407
IC406
IC405
IC610
IC609
IC611
IC616
IC623
IC622
IC625
IC624
IC608
IC620
IC205
IC202
IC207
IC206
IC201
IC203
IC204
IC403
IC401
IC404
IC402
IC618
IC619
IC617
IC613
IC621
IC615
IC602
IC607
IC612
IC613
IC615
IC629
IC301
IC305
IC307
IC308
Q639-642, Q301-310
TRANSIENT KEY SELECTOR
SOFT BORDER KEY GENERATOR
IC110
IC109
IC627
IC626
IC628
RE-31 BOARD
(2/2)
(See page 4-7)
CN303
CN305
CN201
CN701
CN702
CN602
VIDEO
S-VIDEO
MONITOR
BB OUT
GPI IN
GPI OUT
PGM 1
PGM 2
TO
CP-75 BOARD
(EDITOR BLOCK)
CN500
<SEE PAGE 136>
TO
AM-37 BOARD
(AUDIO BLOCK)
CN203
<SEE PAGE 142>
TO
FU-123 BOARD
(POWER BLOCK)
CN605

3-7. POWER BLOCK DIAGRAM




CN205
AUDIO +15V
AUDIO +15V
AUDIO -15V
AUDIO -15V
DIGI 5V
AUDIO MUTE
8231
8231 232
+8V REGULATOR
IC202
-8V REGULATOR
IC203
+12V REGULATOR
IC919
+5V REGULATOR
IC920
+5V REGULATOR
IC921
+2V REGULATOR
IC206
REF 5V
AUDIO AMP
IC707 709
720 820
715 719
251 261
205 271
272
ELECTRONIC VOLUME (VCA)
IC712 713
714 273
CONTROL AMP
IC201
ANALOG SWITCH
IC710 711 718
AUDIO BUFFER
IC705 805 706
806 803 716 816 204
A DSP PROCESSOR
IC901
AUDIO A/D D/A
IC905 907
906 908
BUFFER
IC913 914 917 918
923 922
AMP
IC915
CLOCK DELAY
IC909 910 911
2560RAM
IC903 904
LEVEL METER
METER VCC
CN206
AM-37 BOARD
<SEE PAGE 177>
MIC AMP
IC081
NOISE FILTER
0083 081
MIC +VCC
MIC -VCC
WD81
MJ-65 BOARD
<SEE PAGE 179>
RE-31 BOARD (See page 4-7)
OUTPUT AMPLIFIER
IC301 401
INPUT BUFFER
IC302 303
304 305
306 402
403
AS-46(P) BOARD
R901
RV902
<SEE PAGE 182>
CN002
DC6V 21
DC6V 22
DC6V 23
DC6V 24
IC701
5V REG
I/O EXPANDER IC711 BLOCK
MAIN μ COMPUTER BLOCK IC730
EEROM BLOCK IC709 710
8A CONVERTER BLOCK
WIPE PATTERN GENERATOR IC531
WIPE μ COMPUTER IC529
MEMORY μ COMPUTER IC516
SOFT WIPE GENERATOR
IC301~ 308
CHROMA KEY
LUMINANCE KEY IC950
GATE ARRAY
8A CONVERTER IC952 954
IC951 955
KEY BLOCK (DIGITAL)
LUMINANCE KEY
CHROMA KEY
IC512 5V REG
IC513 5V REG
IC528 5V REG
ADV. SYNC GENERATOR IC523
IC509 5V REG
IC510 5V REG
IC535 5V REG
SYNC GENE IC504
SYNC DRIVE IC507
H CENTER CONTROL IC515 517 519 521
4FSC PLL 0-90 DEG GEN
OSC
C HUE CONTROL
IC501 502 506 503 505 514
75 OHM DRIVER IC623
75 OHM DRIVER IC622
75 OHM DRIVER IC625
75 OHM DRIVER IC624
IC627 5V REG
TRANSIENT KEY SELECTOR
IC610 A Y ATT
IC609 A C ATT
IC611 B Y ATT
IC608 B C ATT
A CHROMA PLUS+BURST
B CHROMA PLUS
CHARACTOR GENERATOR IC205 206
ADV. SYNC GENERATOR IC201 204 203
IC626 5V REG
IC628 9V REG
CHROMA KEY GENERATOR
BORDER COLOR GENERATOR IC101 104 107
CN604
1 FAN 12V
CN603
1 AUDIO +15V
2 AUDIO +15V
3 AUDIO -15V
4 AUDIO -15V
7 DIGI 5V
CN605
1 DC 6V 1
2 DC 6V 2
3 DC 6V 3
7 -8V
8 DC 15V
CN602
CN001
WA_VCC 2
WB_VCC 20
Y/C SEP IC004 002
Y/C SEP IC003 001
CN606
1 CPU 5V
2 CPU 5V
3 CPU 5V
DV-19 BOARD <SEE PAGE 187-211>
CN501
CN502
CN503
CN504
MEM VDD
VDD
WVCC
RVCC
CN101
MM-27 BOARD (B-LINE)
(See page 4-31, 35)
<SEE PAGE 212>
Same as the block below.
CN701
CN201
FRAME MEMORY
IC201 202
IC211 212
IC221 222
DIGITAL CHROMA RECORDER
DIGITAL NOISE REDUCTION
IC181
W-APC VCO
MEMORY CONTROLLER IC301
SCROLL GATE AREY IC351
DIGITAL CHROMA ENCORDER
SPECIAL EFECTS GEN
IC351
R-APC VCO IC371
MUTE PULSE GEN IC305
IC302 303 304
Y A/D CONVERTER IC101
C A/D CONVERTER IC121
WRITE TIMING GEN IC131
IC151 152 153 154
Y D/A CONVERTER IC401
C D/A CONVERTER IC421
READ TIMING GEN IC451
IC472
MM-27 BOARD (A-LINE)
(See page 4-31, 35)
<SEE PAGE 212>
CN600
DRIVER VCC
CN201
RS-422 RS-232C DRIVER BLOCK
RS-62 BOARD
(See page 4-53)
CN501
CPU 5V
MASTER μ COMPUTER BLOCK
MEMORY BACKUP BLOCK IC512 513 516
LANC INTERFACE BLOCK
Q501
CN502
010 5V
CN504
RV VCC
5V
CP-75 BOARD
<SEE PAGE 164>
CN101
CN150
CN801
CN106
CN105
SWITCHER KEY SCAN BLOCK
VOLUME SWITCH FADER LEVER IC100
LED DRIVE BLOCK
KS-15 BOARD
(See page 4-73)
VOLUME JOY STICK BLOCK
JS-25 BOARD
(See page 4-39)

SECTION 4
PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

4-1. FRAME SCHEMATIC DIAGRAM

THIS NOTE IS COMMON FOR PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS.
(In addition to this, the necessary note is printed in each block.)

- **For printed wiring boards.**
- ——o—— : indicated a lead wire mounted on the component side.
- ▬▬ :Pattern from the side which enables seeing. (The other layers' patterns are not indicated.)
- ○ :Through hole
- Circled numbers refer to waveform.*

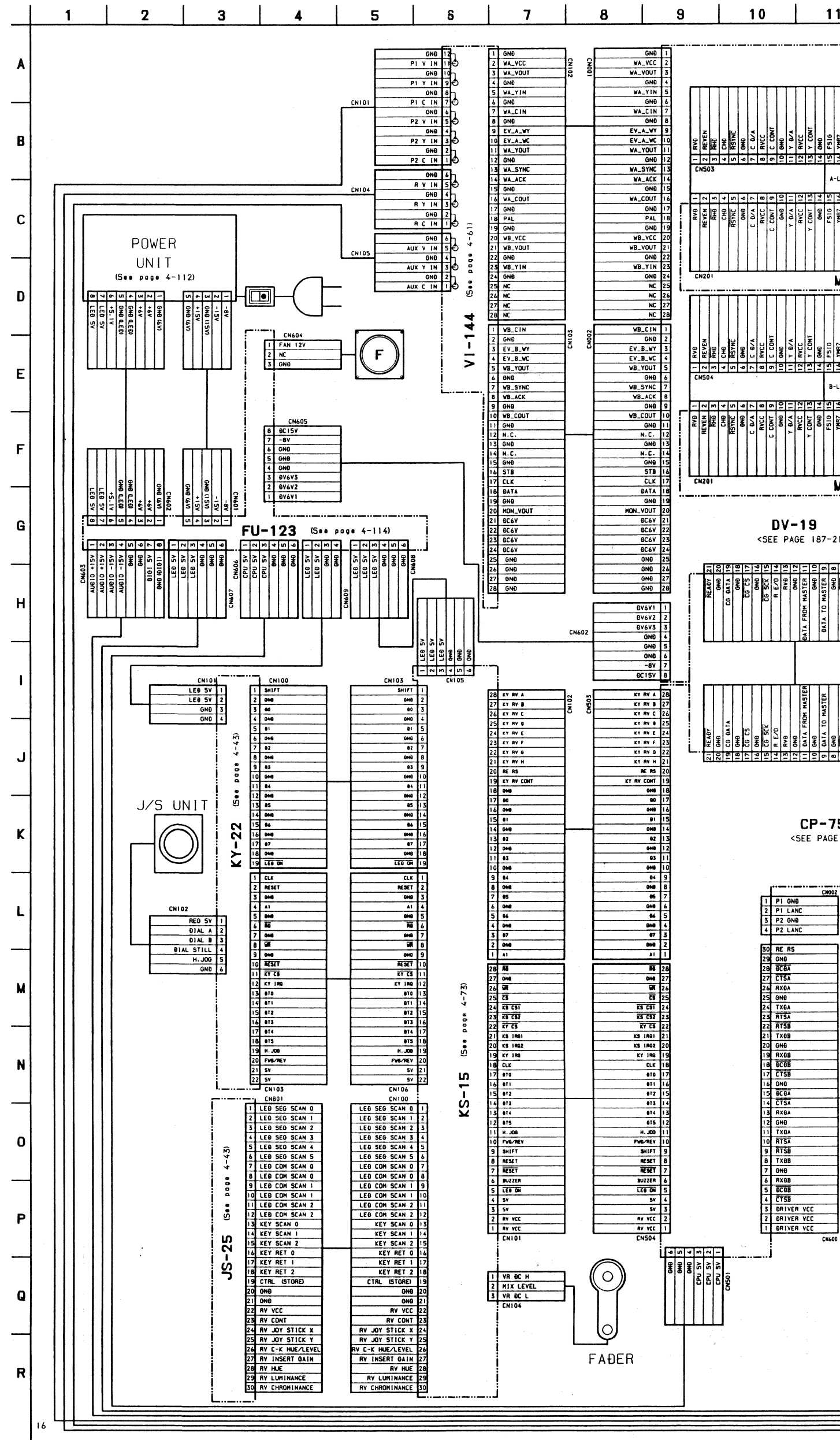
Caution:	
SIDE A: (Comprnent Side)	Parts on the parts face side which is seen from the parts face are indicated.
SIDE B: (Conductor Side)	Parts on the pattern face side seen from the pattern face are indicated.

- **For schematic diagrams.**
- Caution when replacing chip parts..
  New parts must be attached after removal of chip.
  Be careful not to heat the minus side of tantalum capacitor, because it is damaged by the heat.
- All resistors are in ohms, 1/4W unless otherwise noted.
  Chip resistors are 1/10W unless otherwise noted.
  kΩ : 1000Ω, MΩ, : 1000kΩ.
- All capacitors are in μF unless otherwise noted. pF : μ μF. 50V or less are not indicated except for electrolytics and tantalums.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- ⊟ : nonflammable resistor.
- ⊟ : fusible resistor.
- ▭ : panel designation.
- △ : internal component.
- ▭ : adjustment for repair. *
- ▬ : B+ Line. *
- ▬▬ : B− Line. *
- ▨ : IN/OUT direction of (+,−) B LINE. *
- Circled numbers refer to waveforms. *
- Voltages are dc between ground and measurement point when color-bar signal is fed to PLAYER 1 and PLAYER 2. (input impedance : DC 10MΩ) *
- Readings are taken with a digital multimeter (DC 10MΩ).*
- Voltage variations may be noted due to normal production tolerances.

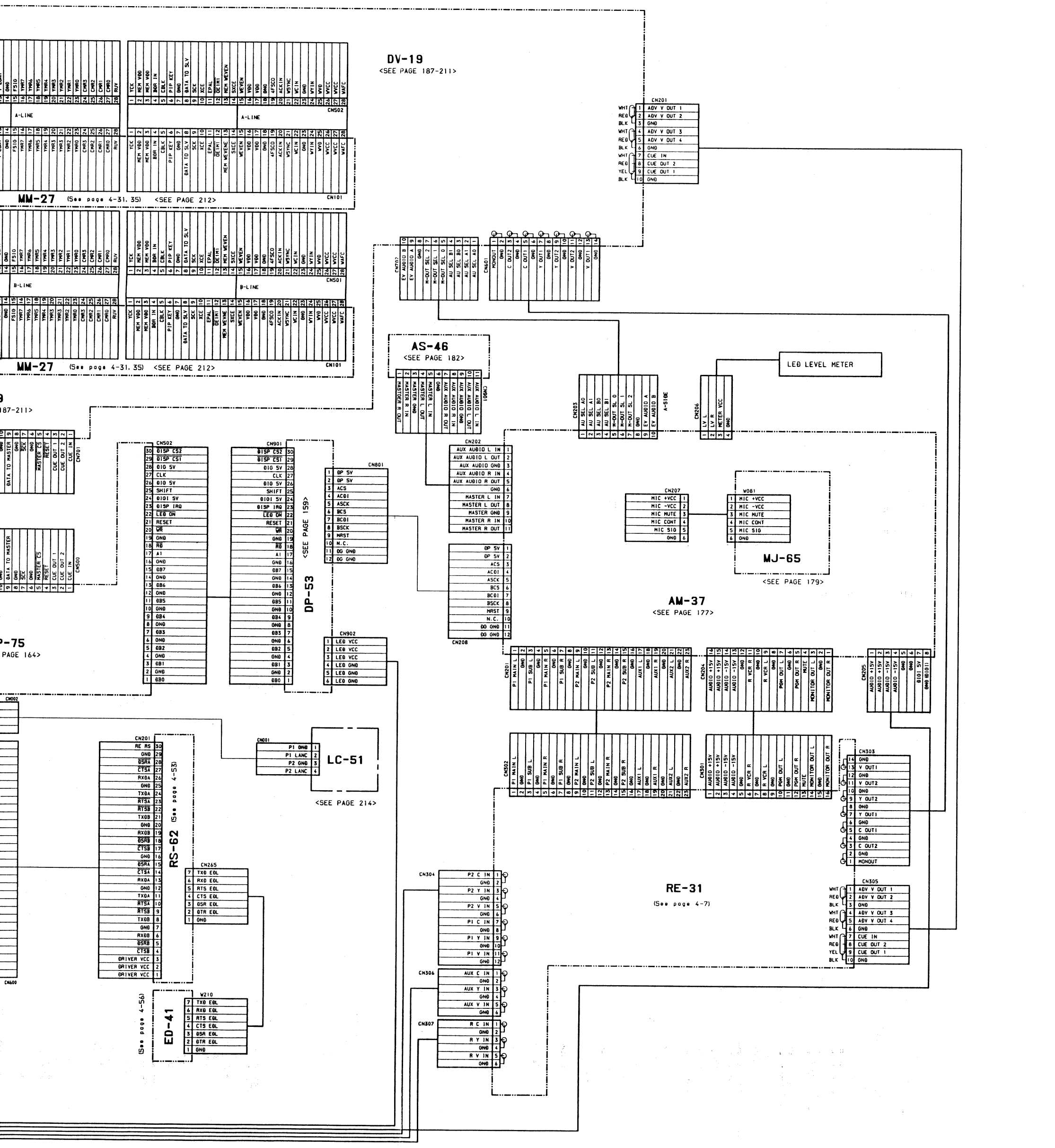
Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

- * : indicated by the color red.



11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26

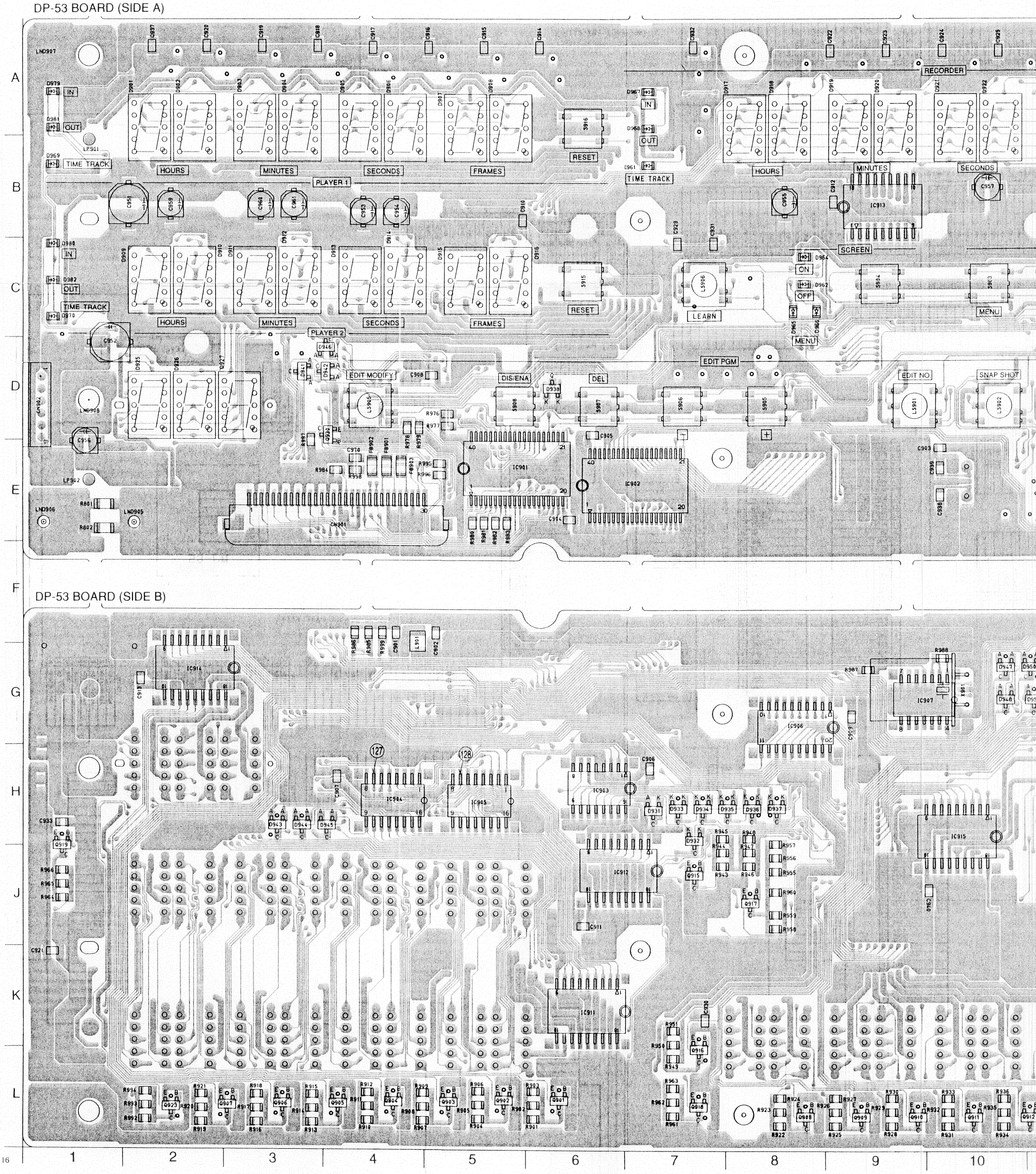


4-2. PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

DP-53 (DISPLAY) PRINTED WIRING BOARD

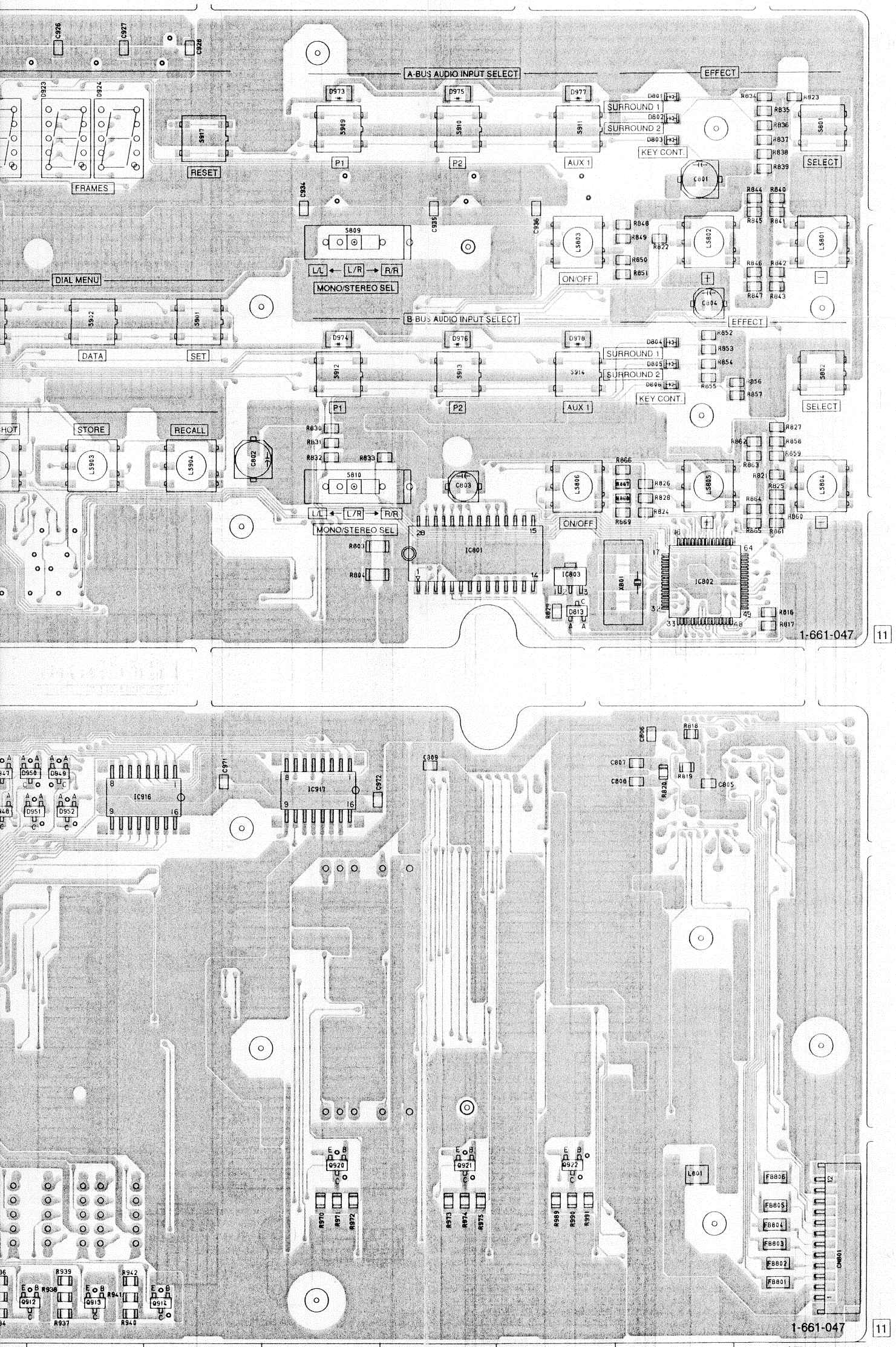
— Ref. No. : DP-53 Board; 2,000 Series —

DP-53 BOARD (SIDE A)



DP-53 BOARD (SIDE B)

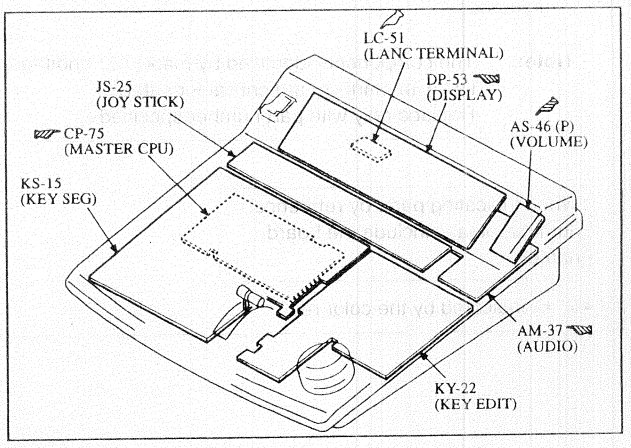
There are few cases that the part printed on this diagram isn't mounted in this model.



11 12 13 14 15 16 17

DP-53 BOARD

CN801	L–17	D933	H–7	IC803	E–15
CN901	E–4	D934	H–7	IC901	E–5
CN902	D–1	D935	H–8	IC902	E–6
		D936	H–8	IC903	H–6
D801	A–16	D937	H–8	IC904	H–4
D802	A–16	D938	D–6	IC905	H–5
D803	A–16	D941	D–3	IC906	G–8
D804	C–16	D942	D–4	IC911	K–6
D805	C–16	D943	H–3	IC912	J–7
D806	C–16	D944	H–4	IC913	B–9
D813	E–15	D945	H–4	IC914	G–2
D901	A–2	D946	D–4	IC915	H–10
D902	A–2	D947	G–10	IC916	G–12
D903	A–3	D948	G–10	IC917	G–13
D904	A–3	D949	G–11		
D905	A–4	D950	G–11	Q901	L–6
D906	A–4	D951	G–11	Q902	L–5
D907	A–5	D952	G–11	Q903	L–5
D908	A–5	D961	B–6	Q904	L–4
D909	C–2	D962	C–8	Q905	L–4
D910	C–3	D964	C–8	Q906	L–3
D911	C–3	D965	C–8	Q907	L–3
D912	B–3	D966	C–8	Q908	L–8
D913	C–4	D967	A–7	Q909	L–9
D914	B–4	D968	A–7	Q910	L–9
D915	C–5	D969	B–1	Q911	L–10
D916	C–5	D970	C–1	Q912	L–11
D917	A–7	D973	A–13	Q913	L–11
D918	A–8	D974	C–13	Q914	L–12
D919	A–8	D975	A–14	Q915	J–7
D920	A–9	D976	C–14	Q916	K–7
D921	A–10	D977	A–15	Q917	J–8
D922	A–10	D978	C–15	Q918	L–7
D923	A–11	D979	A–1	Q919	J–1
D924	A–11	D980	C–1	Q920	K–13
D925	D–2	D981	A–1	Q921	K–14
D926	D–2	D982	C–1	Q922	K–15
D927	D–3			Q923	L–2
D931	H–7	IC801	E–14	Q930	E–4
D932	J–7	IC802	E–16		

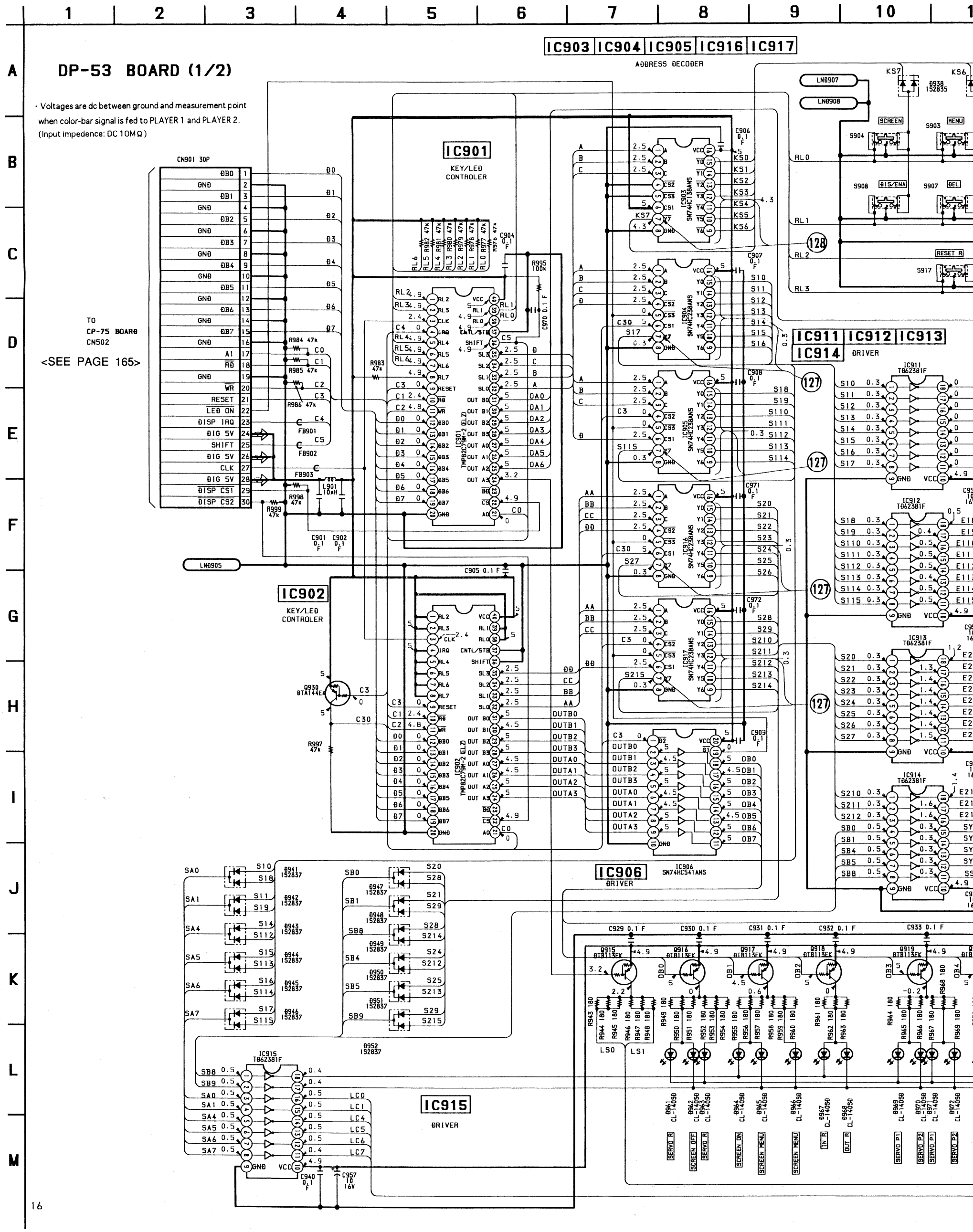


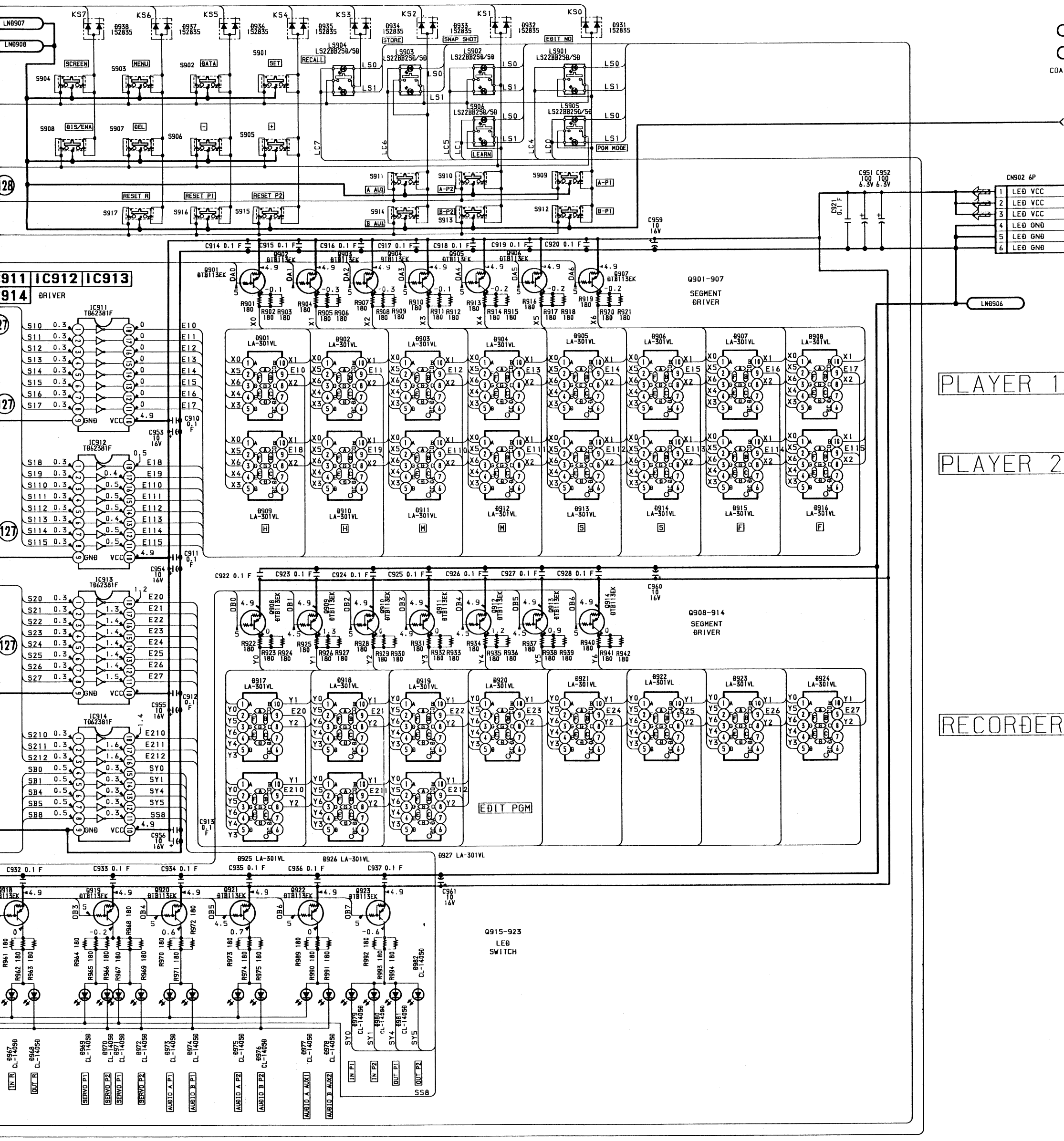
DP-53 (DISPLAY) SCHEMATIC DIAGRAM

— Ref. No. : DP-53 Board; 2,000 Series —

DP-53 BOARD (1/2)

· Voltages are dc between ground and measurement point when color-bar signal is fed to PLAYER 1 and PLAYER 2. (Input impedence: DC 10MΩ)




KS7 KS6 KS5 KS4 KS3 KS2 KS1 KS0
LN8907
LN8908
SCREEN
MENU
DATA
SET
RECALL
STORE
SNAP SHOT
EDIT NO
LEARN
PGM MODE
RESET R
RESET P1
RESET P2
A AUX
B AUX
A-P1
A-P2
B-P1
B-P2
IC911 TD62381F
IC912 TD62381F
IC913 TD62381F
IC914 TD62381F
DRIVER
Q901-907
SEGMENT DRIVER
Q908-914
SEGMENT DRIVER
Q915-923
LED SWITCH
EDIT PGM
PLAYER 1
PLAYER 2
RECORDER
CN902 6P
LED VCC
LED GND
LN8906
IN R
OUT R
SERVO P1
SERVO P2
AUDIO A P1
AUDIO B P1
AUDIO A P2
AUDIO B P2
AUDIO A AUX1
AUDIO B AUX2
IN P1
IN P2
OUT P1
OUT P2
SS8

KS0

EDIT NO

LS901 LS22BB25B/SB

LS905 LS22BB25B/SB

PGM MODE

A-P1

B-P1

C959 10 16V

C919 0.1 F

C920 0.1 F

C921 0.1 F

C951 100 6.3V

C952 100 6.3V

CN902 6P

1	LED VCC
2	LED VCC
3	LED VCC
4	LED GND
5	LED GND
6	LED GND

TO FU-123 BOARD CN607

(See page 4-114)

LP901

LP902

COATING LEAD PIN

DP53-FG- (2/2) <SEE PAGE 163>

LND906

Q901-907 SEGMENT DRIVER

D901 BTB113EK

R916 180 R917 180 R918 180 R919 180 R920 180 R921 180

D902 LA-301VL

D903 LA-301VL

D904 LA-301VL

D905 LA-301VL

D906 LA-301VL

D907 LA-301VL

D908 LA-301VL

D912 LA-301VL

D913 LA-301VL

D914 LA-301VL

D915 LA-301VL

D916 LA-301VL

C927 0.1 F

C928 0.1 F

C960 10 16V

Q908-914 SEGMENT DRIVER

R936 180 R937 180 R938 180 R939 180 R940 180 R941 180 R942 180

D920 LA-301VL

D921 LA-301VL

D922 LA-301VL

D923 LA-301VL

D924 LA-301VL

IT PGM

5-923

LED

WITCH

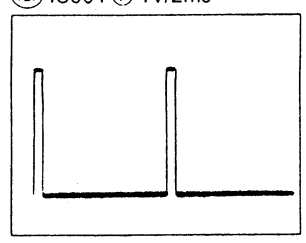
PLAYER 1

PLAYER 2

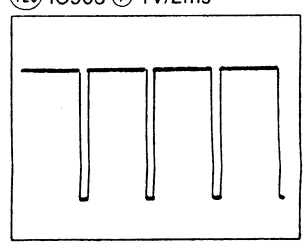
RECORDER

DP-53 BOARD

127 IC904 ⑦ 1V/2ms



128 IC903 ⑦ 1V/2ms



DP-53 BOARD (2/2)

· Voltages are dc between ground and measurement point when color-bar signal is fed to PLAYER 1 and PLAYER 2 (Input impedence: DC 10MΩ)

CN801 12P

DP 5V	1
DP 5V	2
ACS	3
ACDI	4
ASCK	5
BCS	6
BCDI	7
BSCK	8
MRST	9
N.C.	10
DGND	11
DGND	12

TO AM-37 BOARD CN208

<SEE PAGE 178>

FB801 FB802 FB803 FB804 FB805 FB806

L801 47 uH

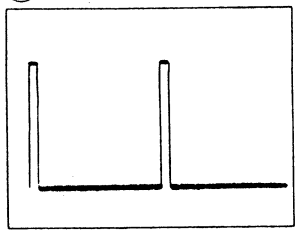
C801 47 6.3V

CL802 CL823 CL819 CL820 CL821 CL834

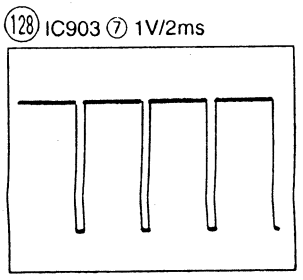
C805 0.1 25V F

DP-53 BOARD

(127) IC904 ⑦ 1V/2ms



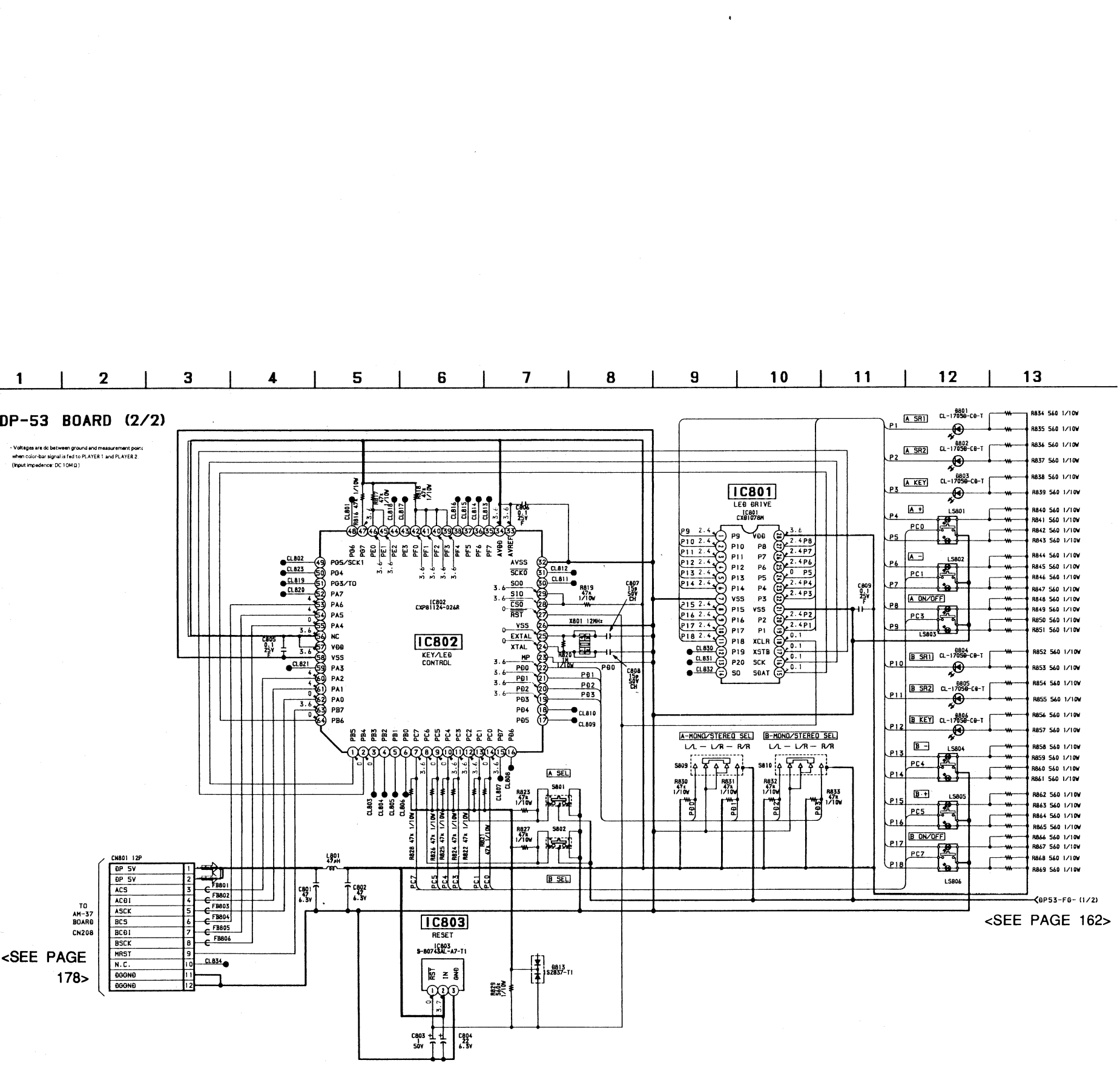
(128) IC903 ⑦ 1V/2ms



1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13

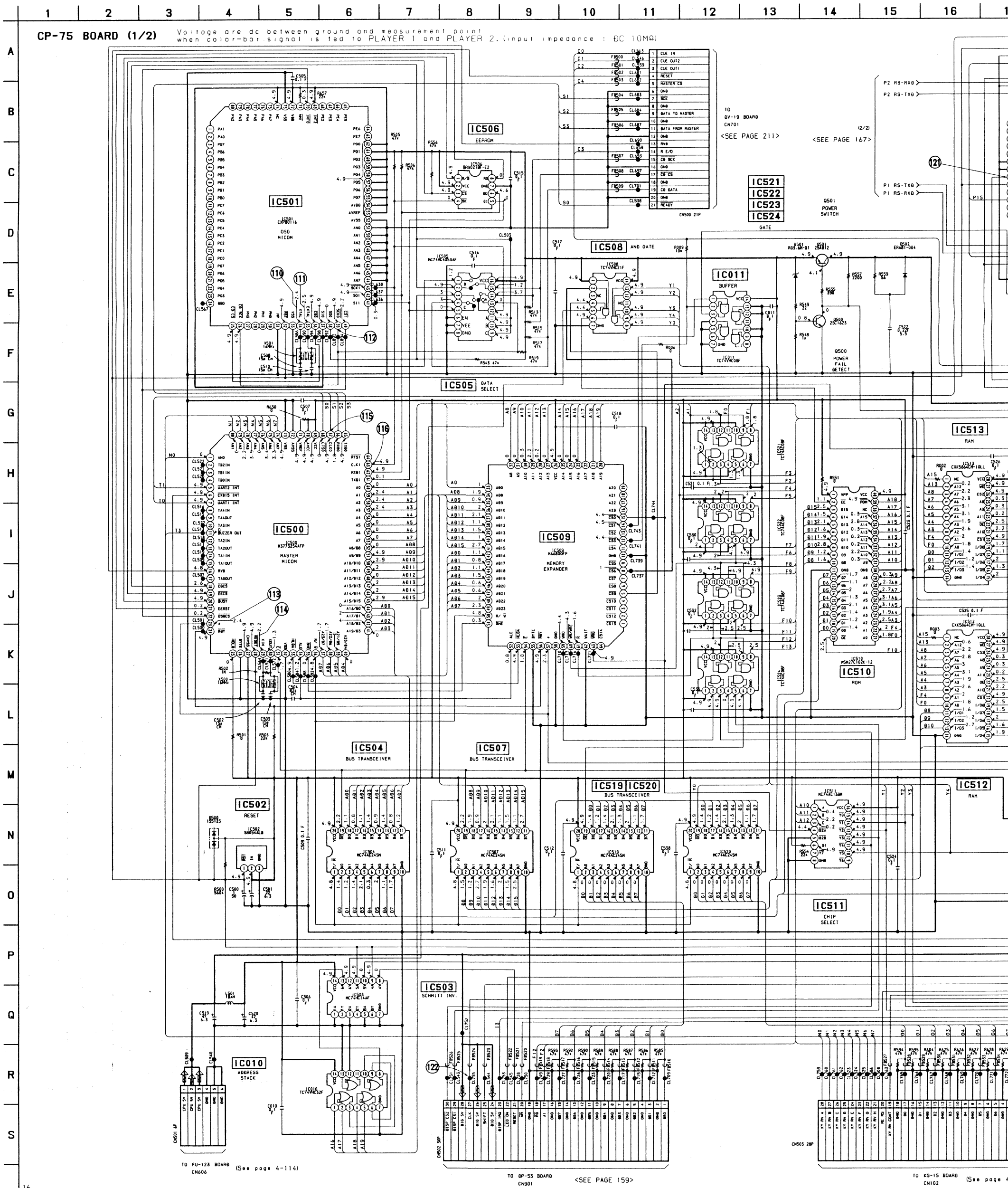
DP-53 BOARD (2/2)

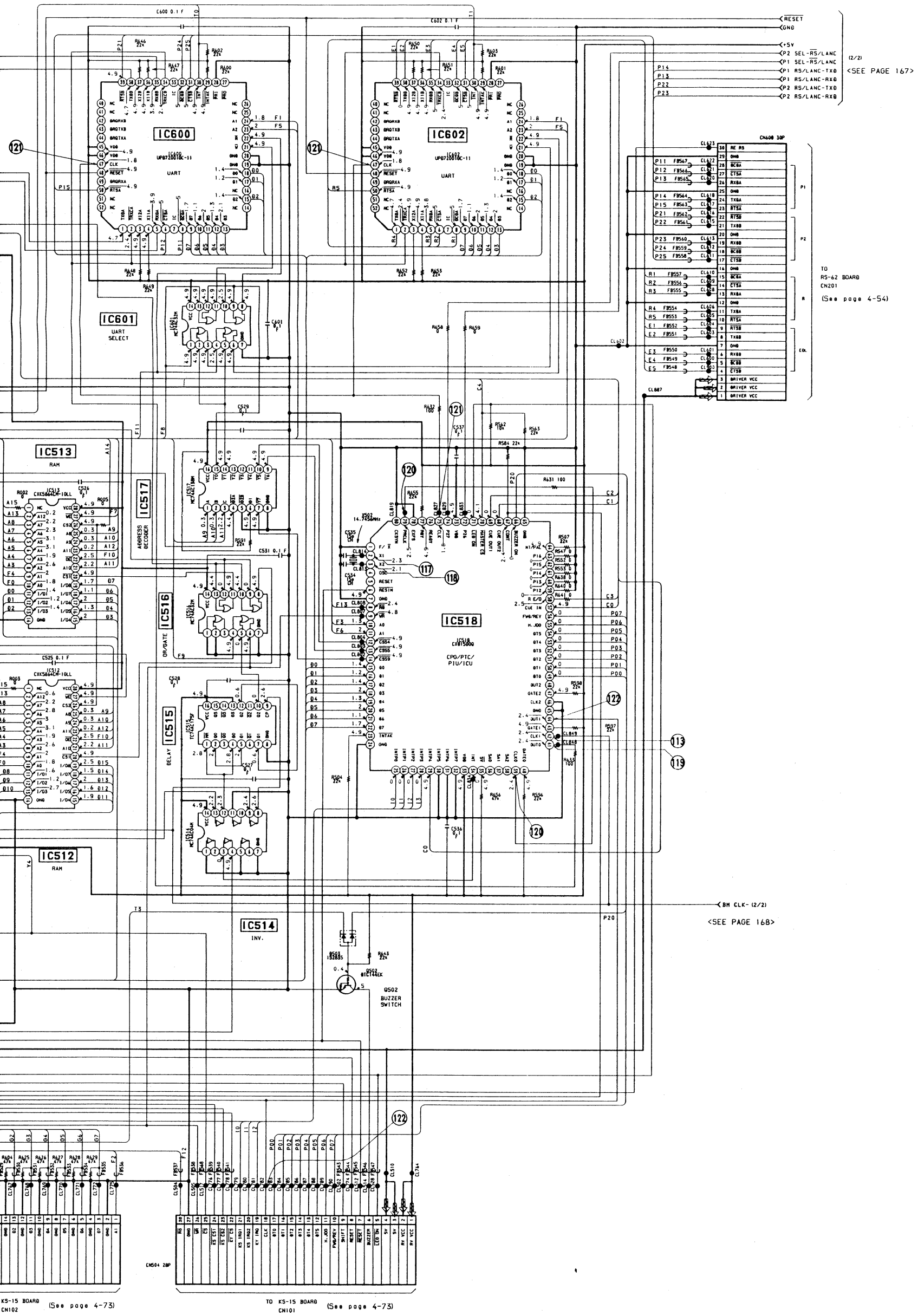
・Voltages are dc between ground and measurement point
when color-bar signal is fed to PLAYER 1 and PLAYER 2.
(Input impedence: DC 10MΩ)



CP-75 (MASTER CPU) SCHEMATIC DIAGRAM

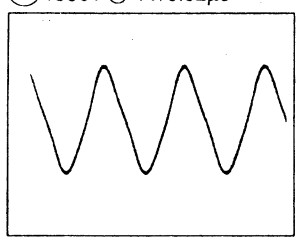
— Ref. No. : CP-75 Board; 2,000 Series —



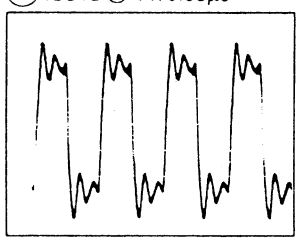

16
17
18
19
20
21
22
23
24
25
26
27
28
A
B
C
D
E
F
G
H
I
J
K
L
IC600
UART
IC601
UART SELECT
IC602
UART
IC513
RAM
IC517
ADDRESS DECODER
IC516
OR/GATE
IC515
DELAY
IC512
RAM
IC514
INV.
IC518
CPG/PTC/ PIU/ICU
Q502
BUZZER SWITCH
RESET
GND
+5V
P2 SEL-RS/LANC
P1 SEL-RS/LANC
P1 RS/LANC-TXD
P1 RS/LANC-RXD
P2 RS/LANC-TXD
P2 RS/LANC-RXD
(2/2)
<SEE PAGE 167>
CN600 30P
TO RS-62 BOARD CN201
(See page 4-54)
BM CLK- (2/2)
<SEE PAGE 168>
CN504 28P
TO KS-15 BOARD CN102
(See page 4-73)
TO KS-15 BOARD CN101
(See page 4-73)

CP-75 BOARD

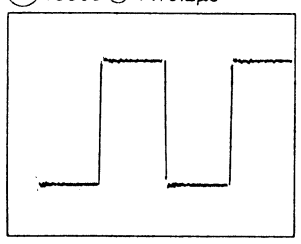
(110) IC501 (34) 1V/0.02µs



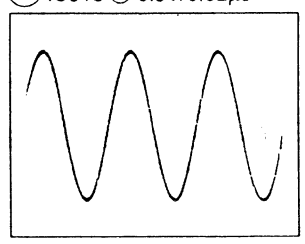
(113) IC518 (42) 1V/0.05µs



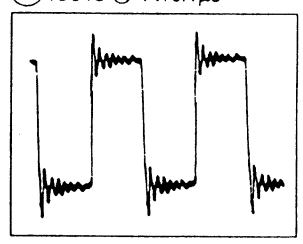
(115) IC500 (67) 1V/0.2µs



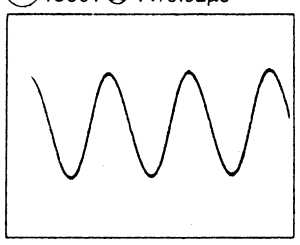
(117) IC518 (2) 0.5V/0.02µs



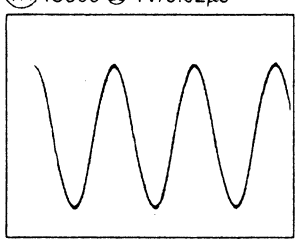
(120) IC518 (39) 1V/0.1µs



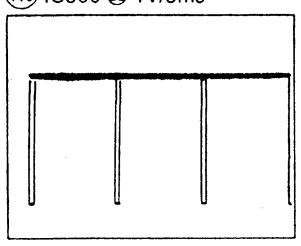
(111) IC501 (35) 1V/0.02µs



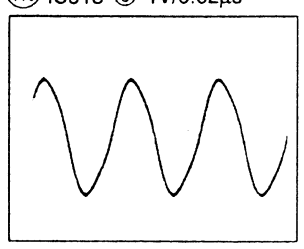
(114) IC500 (29) 1V/0.02µs



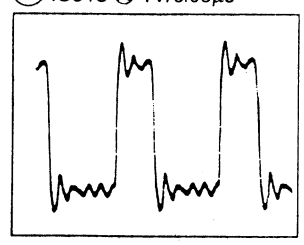
(116) IC500 (63) 1V/5ms



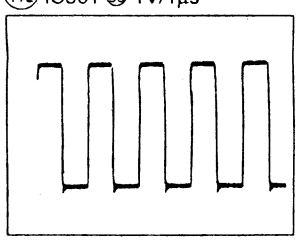
(118) IC518 (3) 1V/0.02µs



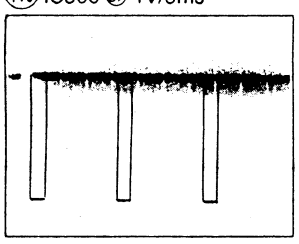
(121) IC518 (75) 1V/0.05µs



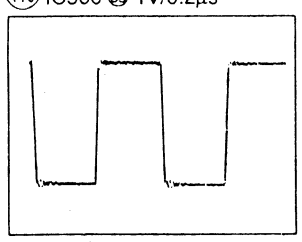
(112) IC501 (39) 1V/1µs



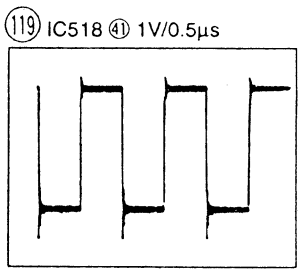
(115) IC500 (67) 1V/5ms



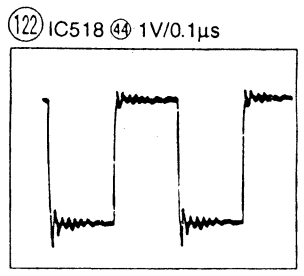
(116) IC500 (63) 1V/0.2µs



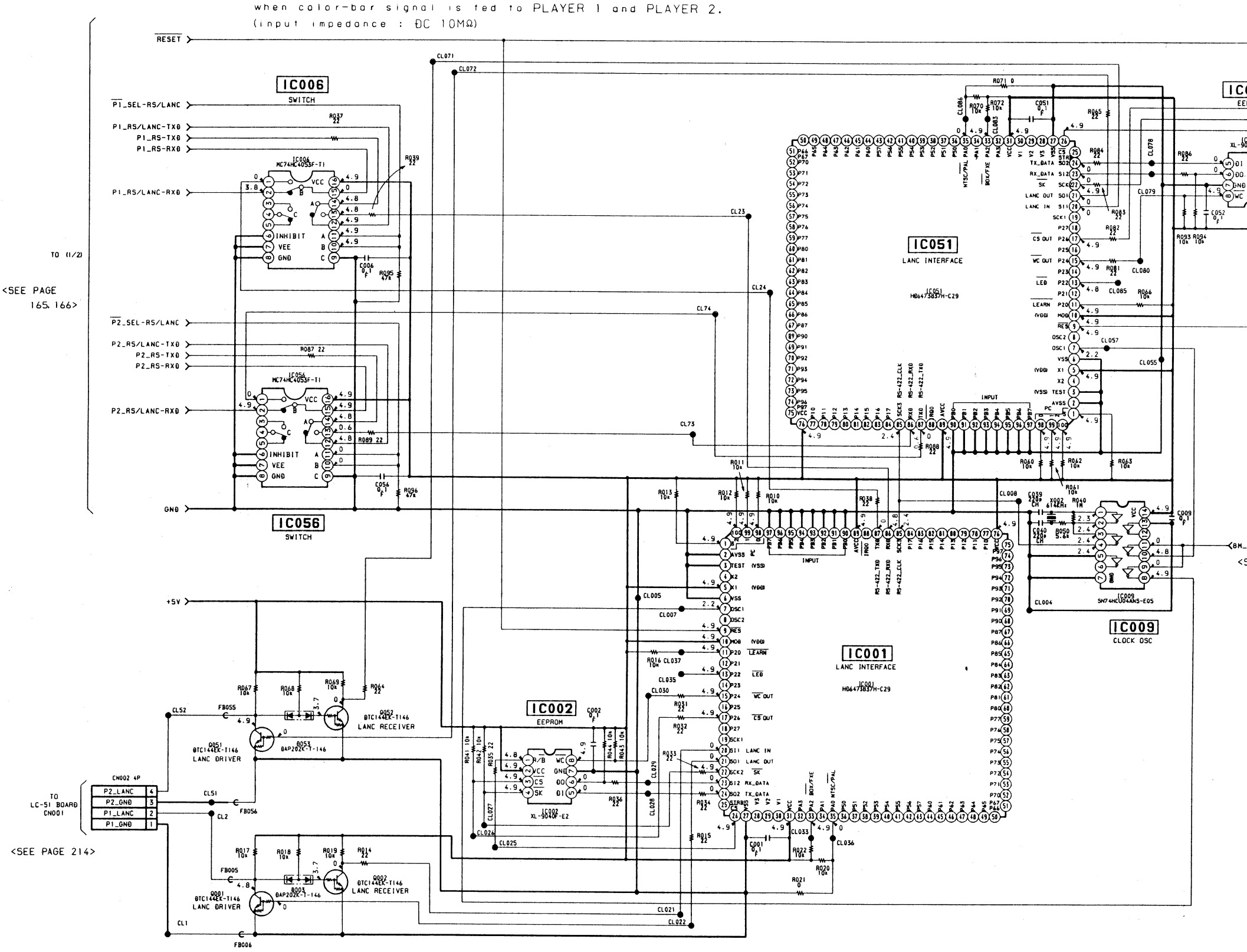
(119) IC518 (41) 1V/0.5µs



(122) IC518 (44) 1V/0.1µs

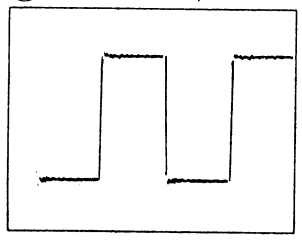


Voltage are dc between ground and measurement point
when color-bar signal is fed to PLAYER 1 and PLAYER 2.
(input impedance : DC 10MΩ)

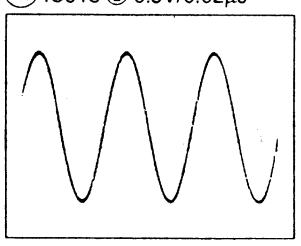


1V/0.05µs

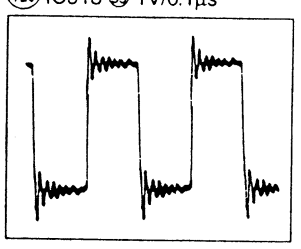
(115) IC500 ⑥⑦ 1V/0.2µs



(117) IC518 ② 0.5V/0.02µs

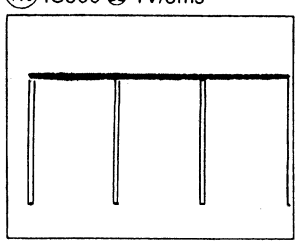


(120) IC518 ㊴ 1V/0.1µs

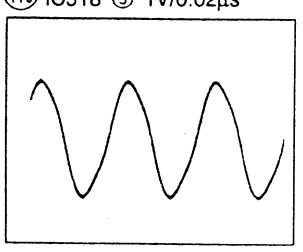


1V/0.02µs

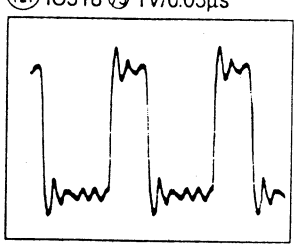
(116) IC500 ⑥③ 1V/5ms



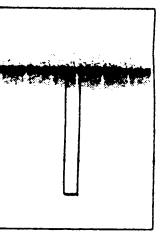
(118) IC518 ③ 1V/0.02µs



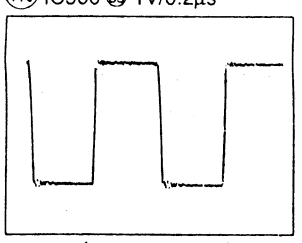
(121) IC518 ㊺ 1V/0.05µs



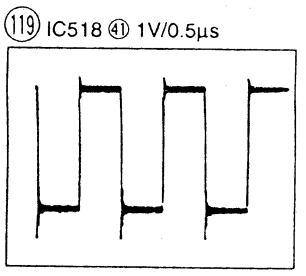
1V/5ms



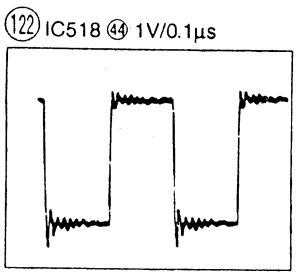
(116) IC500 ⑥③ 1V/0.2µs



(119) IC518 ㊶ 1V/0.5µs



(122) IC518 ㊹ 1V/0.1µs



4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16

tage are dc between ground and measurement point
n color-bar signal is fed to PLAYER 1 and PLAYER 2.
ut impedance : ĐC 10MΩ)

IC006
SWITCH

IC056
SWITCH

IC052
EEPROM

IC051
LANC INTERFACE

IC001
LANC INTERFACE

IC002
EEPROM

IC009
CLOCK OSC

LANC RECEIVER

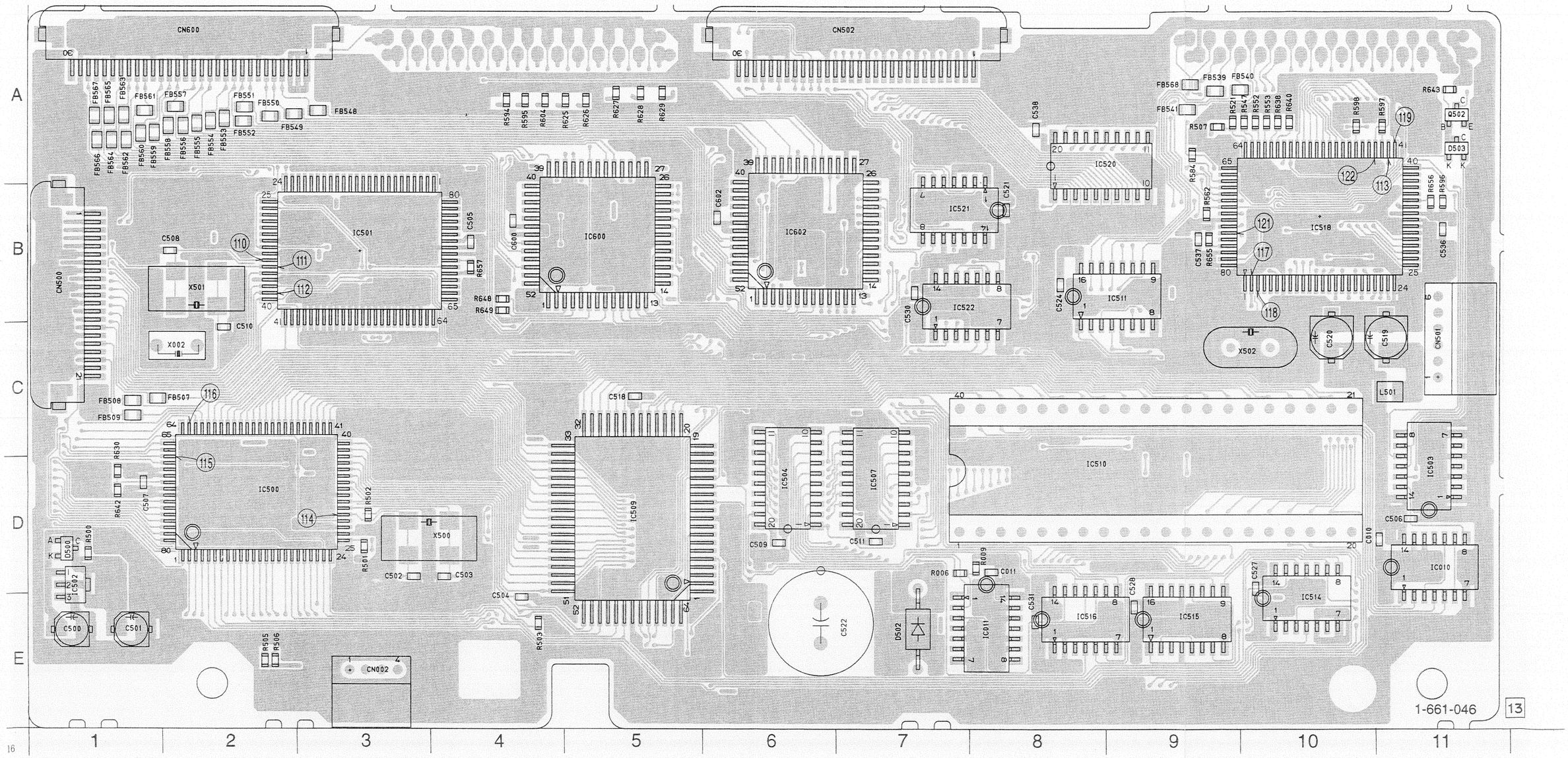
LANC RECEIVER

<SEE PAGE 166>

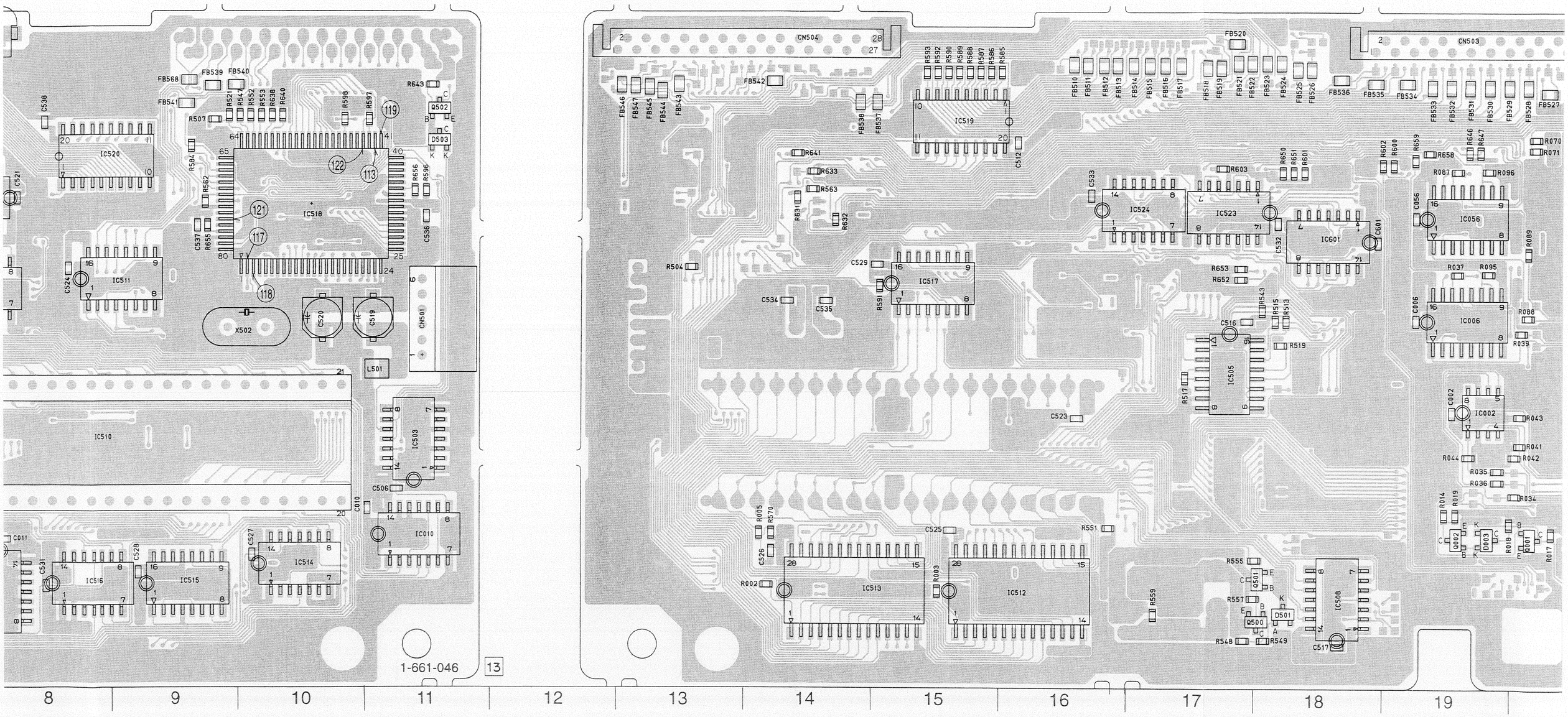
CP-75 (MASTER CPU) PRINTED WIRING BOARD

— Ref. No. : CP-75 Board; 2,000 Series —

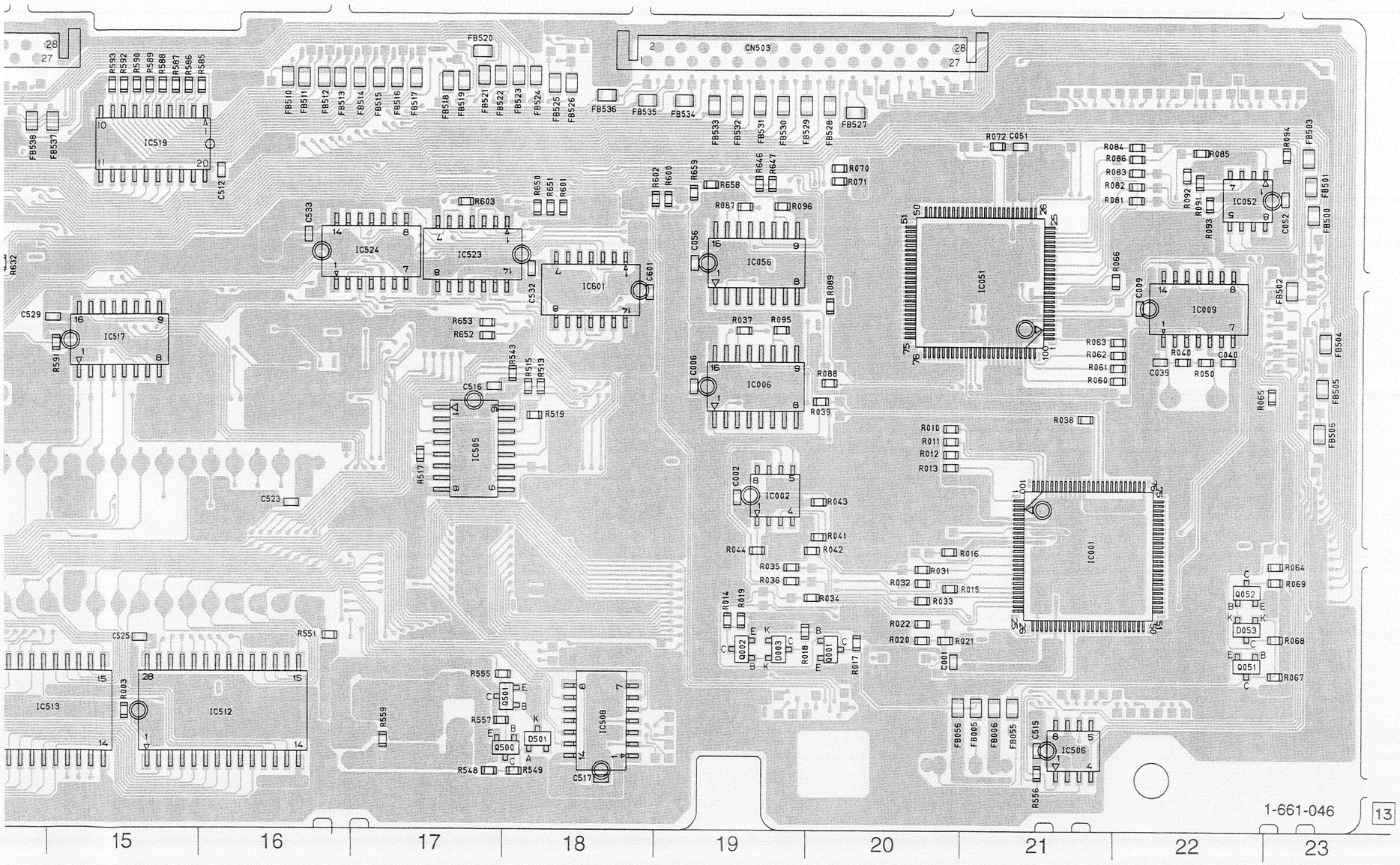
CP-75 BOARD (SIDE A)



CP-75 BOARD (SIDE B)

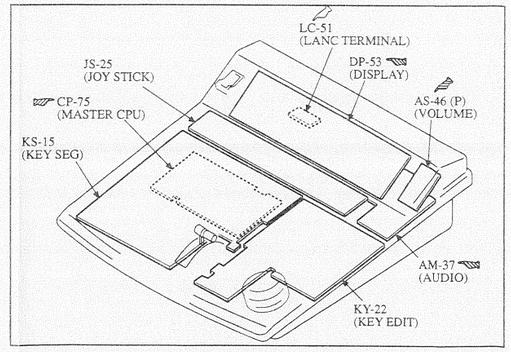


There are few cases that the part printed on this diagram isn't mounted in this model.



CP-75 BOARD

CN002	E-3	IC051	B-20	IC517	B-15
CN500	B-1	IC052	A-22	IC518	B-10
CN501	C-11	IC056	B-19	IC519	A-15
CN502	A-7	IC500	D-2	IC520	A-8
CN503	A-19	IC501	B-3	IC521	B-7
CN504	A-14	IC502	D-1	IC522	B-7
CN600	A-2	IC503	D-11	IC523	B-17
		IC504	D-6	IC524	B-17
D003	D-19	IC505	C-17	IC600	B-5
D053	D-22	IC506	E-21	IC601	B-18
D500	D-1	IC507	D-7	IC602	B-6
D501	E-18	IC508	E-18		
D502	E-7	IC509	D-5	Q001	D-20
D503	A-11	IC510	D-8	Q002	D-19
		IC510	D-8	Q051	D-22
IC001	D-21	IC511	B-8	Q052	D-22
IC002	C-19	IC512	E-16	Q500	E-17
IC006	C-19	IC513	E-14	Q501	E-17
IC009	B-22	IC514	D-10	Q502	A-11
IC010	D-11	IC515	D-9		
IC011	D-8	IC516	D-8		



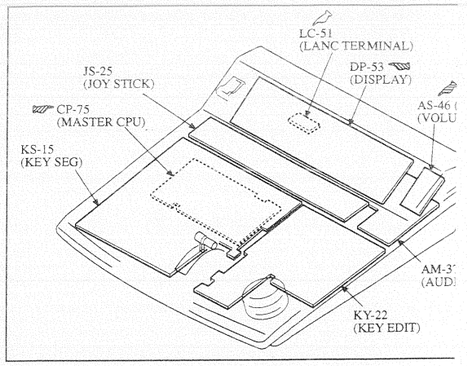
AM-37 (AUDIO) PRINTED WIRING BOARD AND SCHEMATIC DIAGRAM

— Ref. No. : AM-37 Board; 1,000 Series —

There are few cases that the part printed on this diagram isn't mounted in this model.

AM-37 BOARD

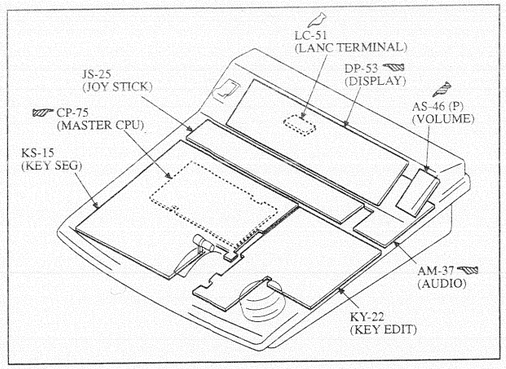
CN201	A–4	D703	E–7	IC251	B–17	IC714	D–3	IC903	D–10	IC916	B–16	Q205	A–16
CN202	A–1	D704	C–7	IC261	B–16	IC715	E–20	IC904	B–10	IC917	B–15	Q206	A–16
CN203	A–8	D705	C–7	IC271	C–22	IC716	C–18	IC905	E–14	IC918	A–16	Q207	A–16
CN204	A–6	D801	D–7	IC272	D–22	IC718	C–16	IC906	B–14	IC919	C–4	Q231	A–20
CN205	A–2	D802	D–7	IC273	D–2	IC719	E–20	IC907	D–14	IC920	B–4	Q251	B–17
CN206	A–9	D803	D–7	IC705	G–4	IC720	B–18	IC908	A–14	IC921	D–16	Q252	A–17
CN207	C–1			IC706	G–3	IC803	G–1	IC909	C–13	IC922	D–15	Q261	B–17
CN208	A–10	IC201	B–16	IC707	E–17	IC805	H–4	IC910	C–13	IC923	B–15	Q262	A–17
		IC202	B–1	IC709	E–18	IC806	H–3	IC911	C–14			Q271	C–22
D231	B–20	IC203	C–3	IC710	D–16	IC816	C–18	IC912	C–10	Q201	A–15	Q272	D–22
D232	A–20	IC204	G–1	IC711	D–16	IC820	B–18	IC913	D–15	Q202	A–15		
D701	E–7	IC205	H–1	IC712	D–6	IC901	D–13	IC914	D–15	Q203	A–15		
D702	E–7	IC206	B–1	IC713	D–4	IC902	B–13	IC915	C–15	Q204	A–16		

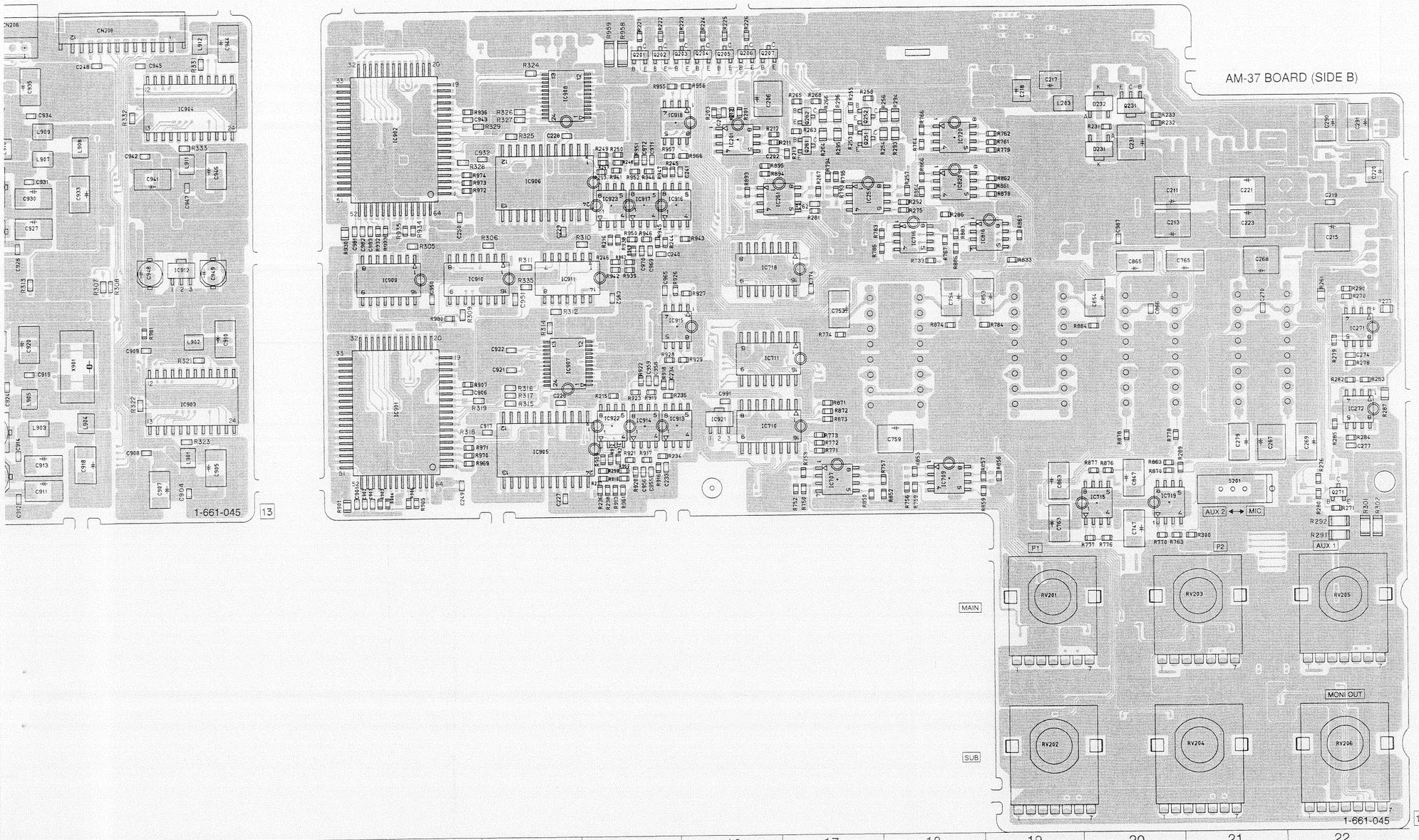


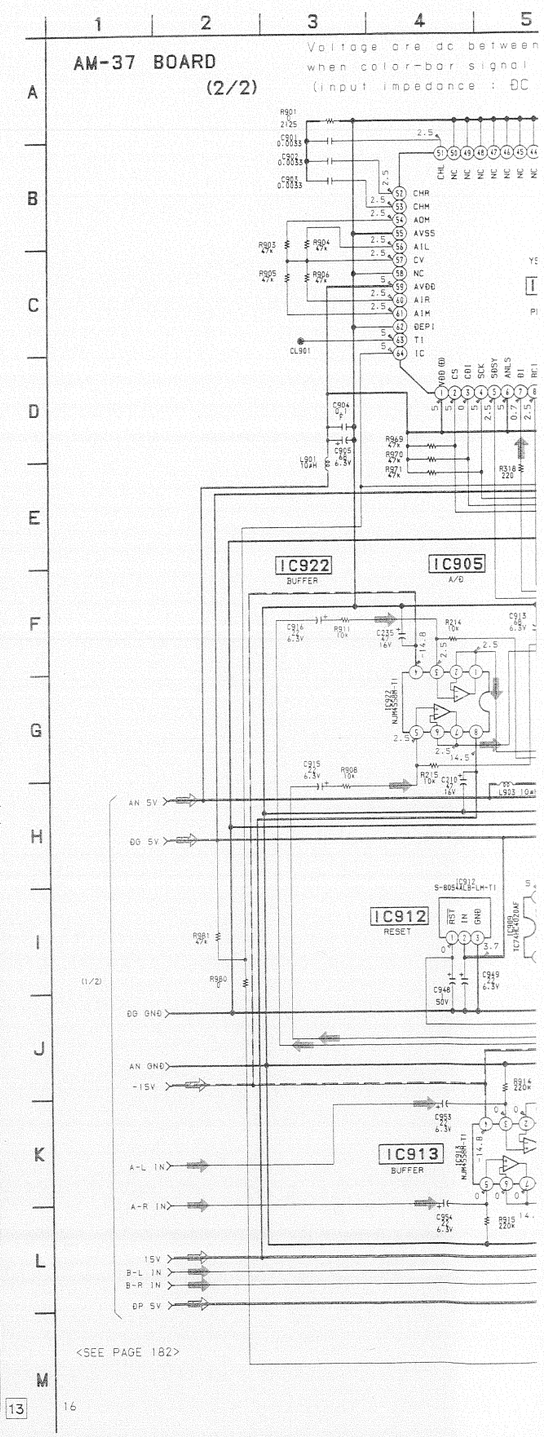
AM-37 BOARD (SIDE A)

1-661-045

17	IC714	D-3	IC903	D-10	IC916	B-16	Q205	A-16
16	IC715	E-20	IC904	B-10	IC917	B-15	Q206	A-16
22	IC716	C-18	IC905	E-14	IC918	A-16	Q207	A-16
22	IC718	C-16	IC906	B-14	IC919	C-4	Q231	A-20
2	IC719	E-20	IC907	D-14	IC920	B-4	Q251	B-17
4	IC720	B-18	IC908	A-14	IC921	D-16	Q252	A-17
3	IC803	G-1	IC909	C-13	IC922	D-15	Q261	B-17
17	IC805	H-4	IC910	C-13	IC923	B-15	Q262	A-17
18	IC806	H-3	IC911	C-14			Q271	C-22
16	IC816	C-18	IC912	C-10	Q201	A-15	Q272	D-22
16	IC820	B-18	IC913	D-15	Q202	A-15		
6	IC901	D-13	IC914	D-15	Q203	A-15		
4	IC902	B-13	IC915	C-15	Q204	A-16		



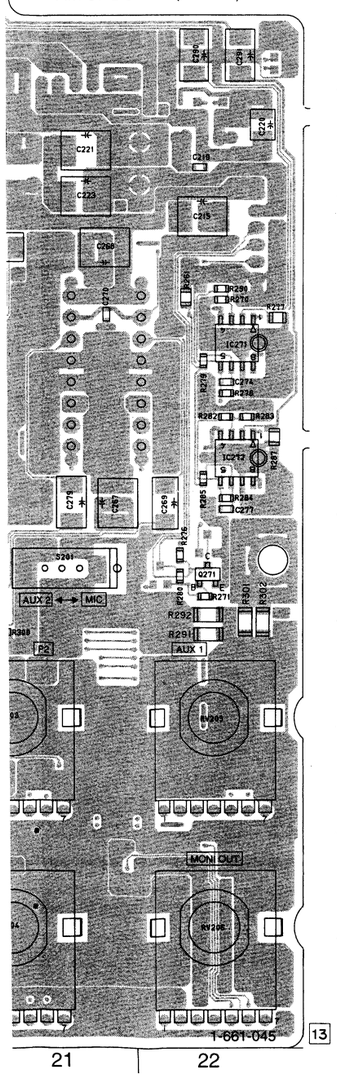




AM-37 BOARD (2/2)

Voltage are dc between ground and measurement point when color-bar signal is fed to PLAYER 1 and PLAYER 2. (input impedance : DC 10MΩ)

AM-37 BOARD (SIDE B)



IC901 A DSP PROCESSOR (YSS216B-F)
IC902 B DSP PROCESSOR (YSS216B-F)
IC903 256 Ø RAM
IC904 256 Ø RAM
IC905 A/D
IC906 A/D
IC907 D/A
IC908 D/A
IC909 CLOCK DELAY
IC910 CLOCK DELAY
IC911 BUFFER
IC912 RESET
IC913 BUFFER
IC914 AMP
IC915 LPF
IC916 BUFFER
IC917 AMP
IC918 LPF
IC922 BUFFER
IC923 BUFFER

CN208 12P

1	DP 5V
2	DP 5V
3	ACS
4	ACDI
5	ASCK
6	BCS
7	BCDI
8	BSCK
9	MRST
10	N.C.
11	DGGND
12	DGGND

TO DP-53 BOARD CN901

<SEE PAGE 162>

<SEE PAGE 182>

(1/2)

AN 5V, DG 5V, DG GND, AN GND, -15V, A-L IN, A-R IN, 15V, B-L IN, B-R IN, DP 5V

B-DSP L, B-DSP R, A-DSP L, A-DSP R

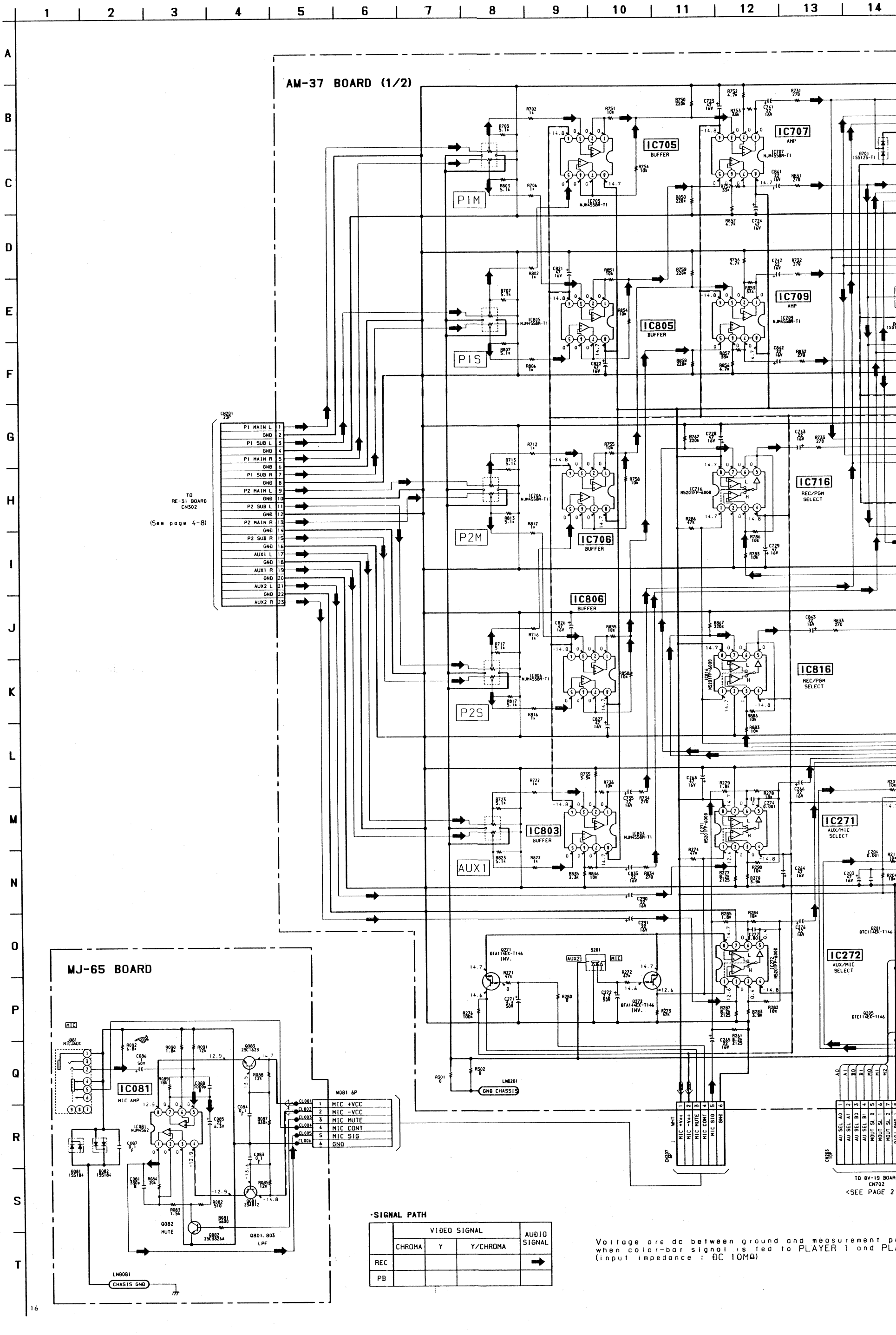
<SEE PAGE 182> (1/2)

·SIGNAL PATH

	VIDEO SIGNAL			AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA	
REC				➡
PB				

AM-37 (AUDIO) SCHEMATIC DIAGRAM

— Ref. No. : AM-37 Board; 1,000 Series —



·SIGNAL PATH

	VIDEO SIGNAL			AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA	
REC				➡
PB				

Voltage are dc between ground and measurement p
when color-bar signal is fed to PLAYER 1 and PL
(input impedance : DC 10MΩ)

IC710 INPUT SELECT
IC711 INPUT SELECT
IC712 VCA
IC713 VCA
IC715 MIX AMP
IC714 VCA
IC273 VCA
IC719 BUFFER
IC718 MONITOR OUTPUT SELECT
IC720 INV. AMP
IC251 AMP
IC261 AMP
IC820 INV. AMP
IC204 BUFFER
IC205 AMP
IC201 INV.
IC206 +2V REG.
IC920 +5V REG.
IC203 -8V REG.
IC202 +8V REG.
IC919 +12V REG.
Q201-204 INV.
Q205-207 INV.
Q251. 252 MUTE
Q261. 262 MUTE
Q231 INITIAL MUTE
MON
MONI OUT

CN202 11P
1 AUX AUDIO L IN
2 AUX AUDIO L OUT
3 AUX AUDIO GND
4 AUX AUDIO R IN
5 AUX AUDIOR OUT
6 GND
7 MASTER L IN
8 MASTER L OUT
9 MASTER GND
10 MASTER R IN
11 MASTER R OUT

CN901
AUX AUDIO/MIC IN L
AUX AUDIO/MIC OUT L
GND
AUX AUDIO/MIC IN R
AUX AUDIO/MIC OUT R
GND
MASTER L RV IN
MASTER L RV OUT
GND
MASTER R RV IN
MASTER R RV OUT

A-L IN
A-R IN
B-L IN
B-R IN
(2/2) <SEE PAGE 177>
A-DSP L
A-DSP R
B-DSP L
B-DSP R
(2/2) <SEEE PAGE 178>
15V
-15V
AN GND
(2/2) <SEEE PAGE 177>

CN206 4P L YEL
1 LV L
2 LV R
3 METFR Vcc
4 GND
LEB LEVEL METER

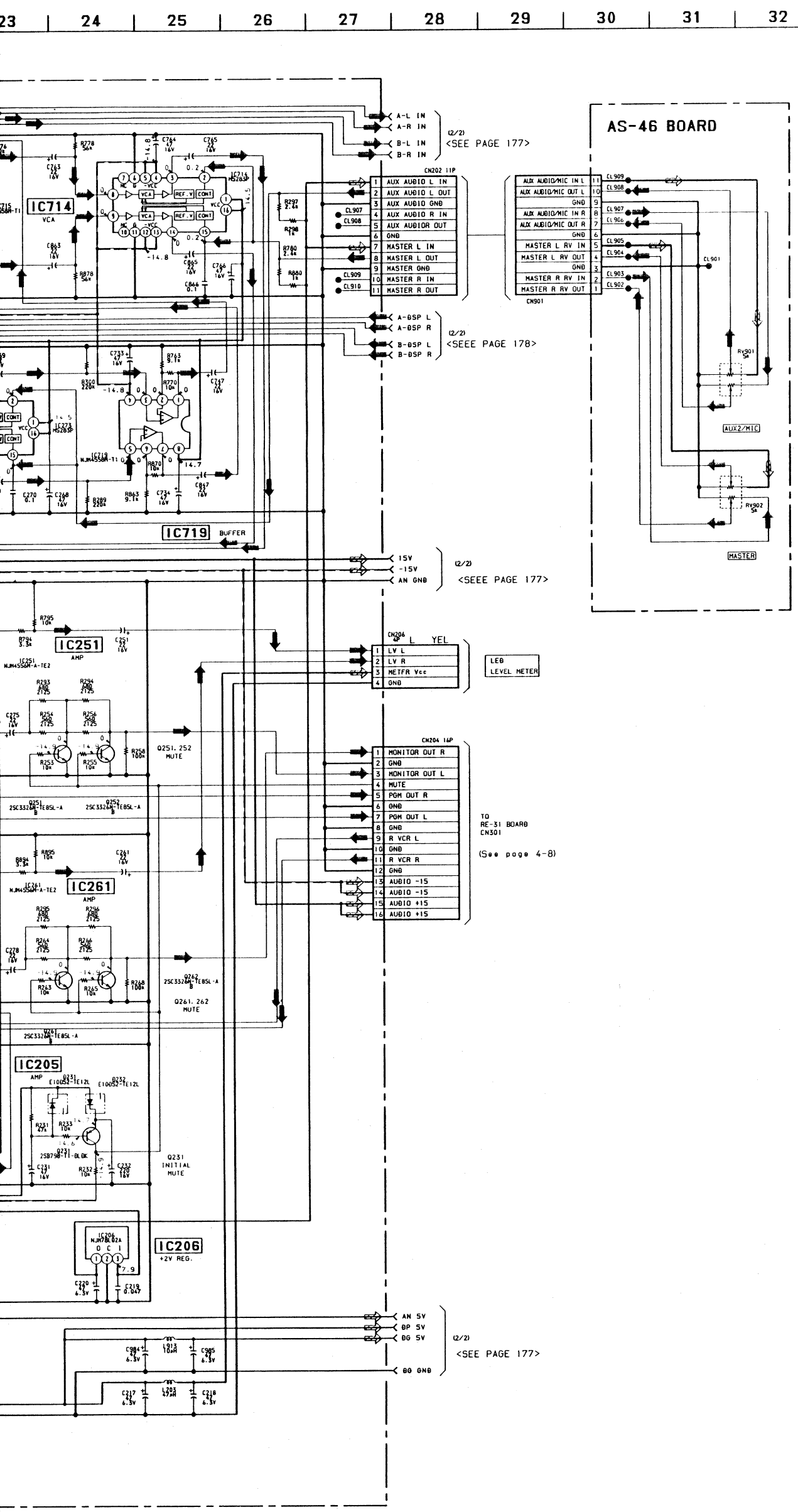
CN204 16P
1 MONITOR OUT R
2 GNB
3 MONITOR OUT L
4 MUTE
5 PGM OUT R
6 GNB
7 PGM OUT L
8 GNB
9 R VCR L
10 GNB
11 R VCR R
12 GNB
13 AUDIO -15
14 AUDIO -15
15 AUDIO +15
16 AUDIO +15
TO RE-31 BOARB CN301 (See page 4-8)

AN 5V
DP 5V
BG 5V
BG GNB
(2/2) <SEE PAGE 177>

CN205 9P L BLK
1 AUDIO +15V
2 AUDIO +15V
3 AUDIO -15V
4 AUDIO -15V
5 GND
6 GND
7 DIGI 5V
8 GND (DIGI)
9 AN6V
TO FU-123 BOARB CN603 (See page 4-114)

1 AU SEL A0
2 AU SEL A1
3 AU SEL B0
4 AU SEL B1
5 MOUT SL 0
6 MOUT SL 1
7 MOUT SL 2
8 DIGI GND
9 EV AUDIO A
10 EV AUDIO B
TO BV-19 BOARB CN702 <SEE PAGE 211>

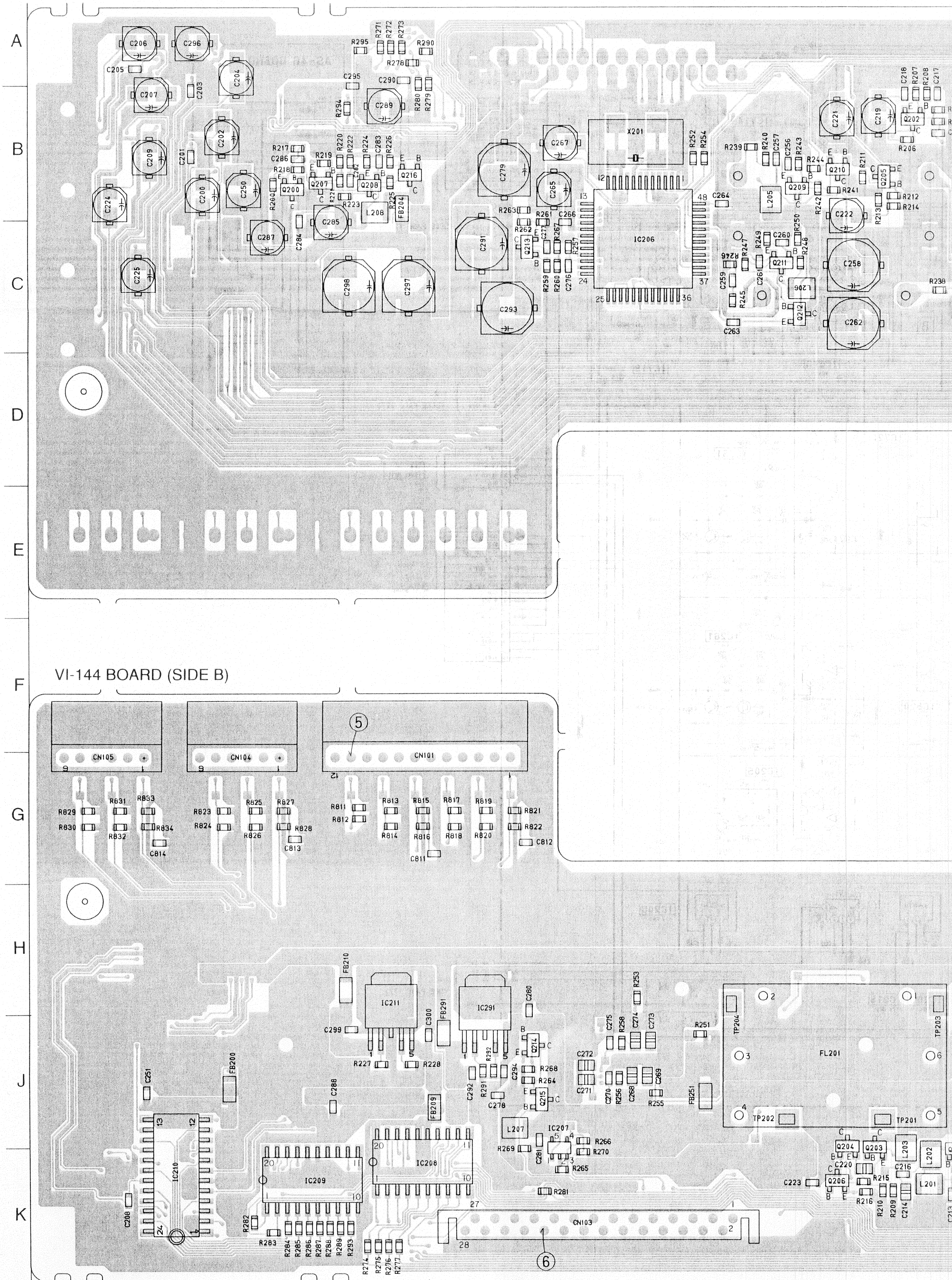
urement point
1 and PLAYER 2.


23
24
25
26
27
28
29
30
31
32
AS-46 BOARD
A-L IN
A-R IN
B-L IN
B-R IN
(2/2)
<SEE PAGE 177>
CN202 11P
1 AUX AUDIO L IN
2 AUX AUDIO L OUT
3 AUX AUDIO GND
4 AUX AUDIO R IN
5 AUX AUDIOR OUT
6 GND
7 MASTER L IN
8 MASTER L OUT
9 MASTER GND
10 MASTER R IN
11 MASTER R OUT
CL907
CL908
CL909
CL910
AUX AUDIO/MIC IN L
AUX AUDIO/MIC OUT L
GND
AUX AUDIO/MIC IN R
AUX AUDIO/MIC OUT R
GND
MASTER L RV IN
MASTER L RV OUT
GND
MASTER R RV IN
MASTER R RV OUT
CN901
CL909
CL908
CL907
CL906
CL905
CL904
CL903
CL902
CL901
A-DSP L
A-DSP R
B-DSP L
B-DSP R
(2/2)
<SEEE PAGE 178>
IC714
VCA
IC719
BUFFER
AUX2/MIC
MASTER
RV901
RV902
15V
-15V
AN GND
(2/2)
<SEEE PAGE 177>
IC251
AMP
CN204 4P
L YEL
1 LV L
2 LV R
3 METFR Vcc
4 GND
LED
LEVEL METER
CN204 16P
1 MONITOR OUT R
2 GND
3 MONITOR OUT L
4 MUTE
5 PGM OUT R
6 GND
7 PGM OUT L
8 GND
9 R VCR L
10 GND
11 R VCR R
12 GND
13 AUDIO -15
14 AUDIO -15
15 AUDIO +15
16 AUDIO +15
TO
RE-31 BOARD
CN301
(See page 4-8)
Q251, 252
MUTE
IC261
AMP
Q262
Q261, 262
MUTE
IC205
AMP
Q231
INITIAL
MUTE
IC206
+2V REG.
AN 5V
DP 5V
DG 5V
DG GND
(2/2)
<SEE PAGE 177>

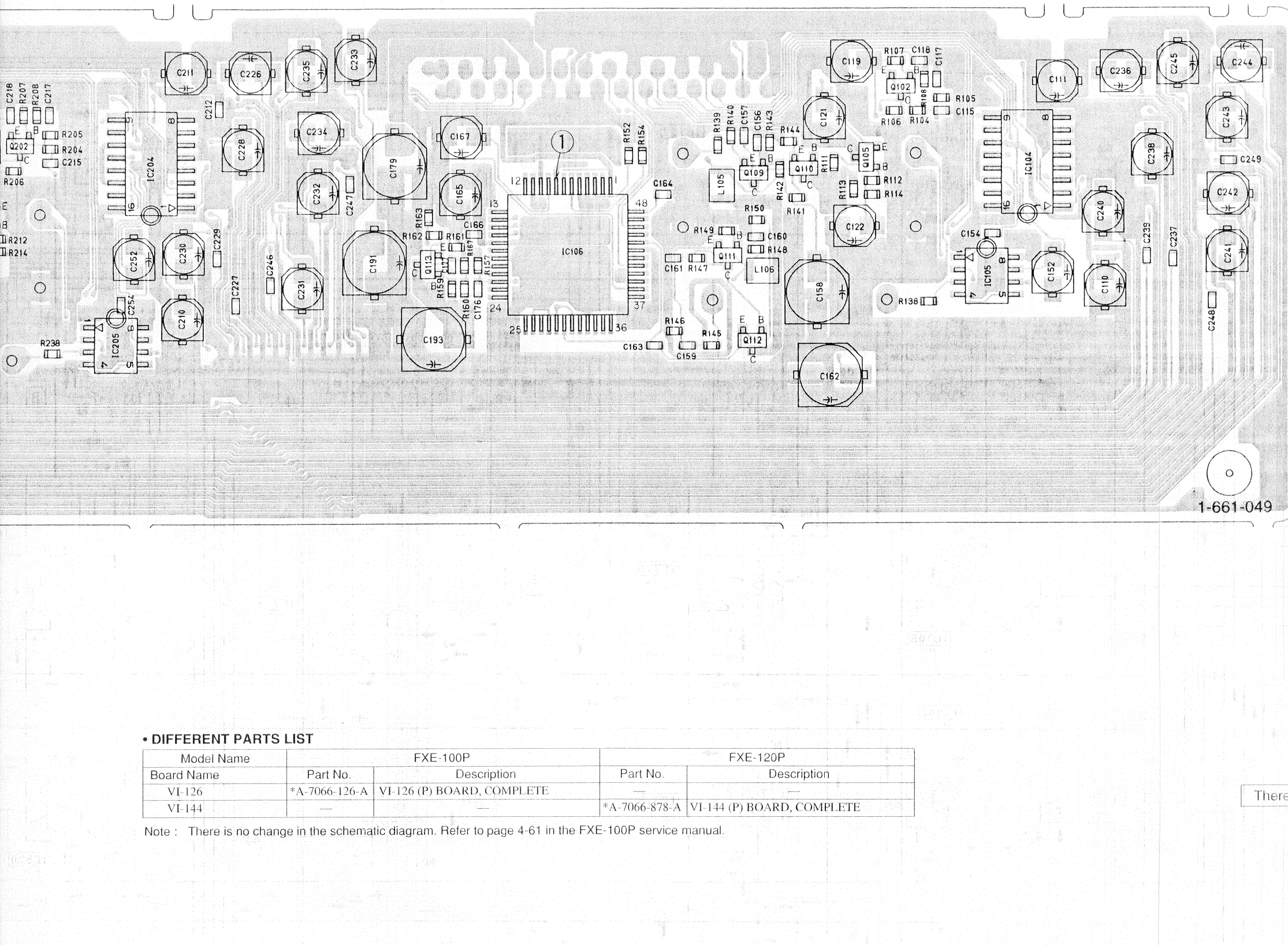
VI-144 (VIDEO INPUT) PRINTED WIRING BOARD

— Ref. No. : VI-144 Board; 6,000 Series —

VI-144 BOARD (SIDE A)



VI-144 BOARD (SIDE B)



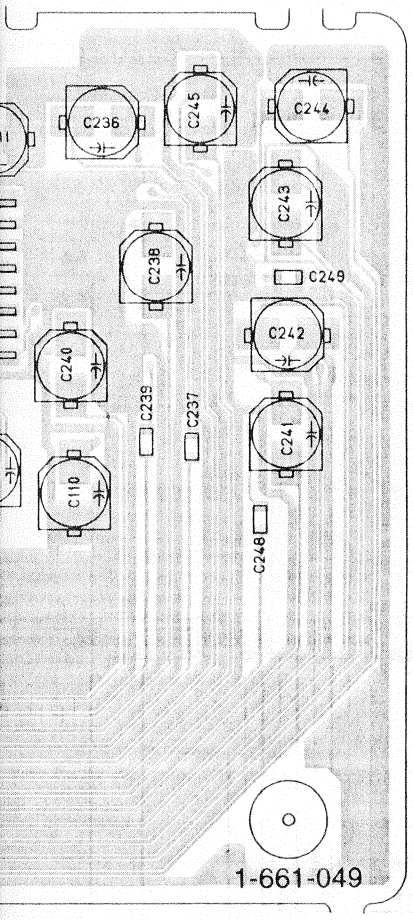
• **DIFFERENT PARTS LIST**

Model Name	FXE-100P		FXE-120P	
Board Name	Part No.	Description	Part No.	Description
VI-126	*A-7066-126-A	VI-126 (P) BOARD, COMPLETE	—	—
VI-144	—	—	*A-7066-878-A	VI-144 (P) BOARD, COMPLETE

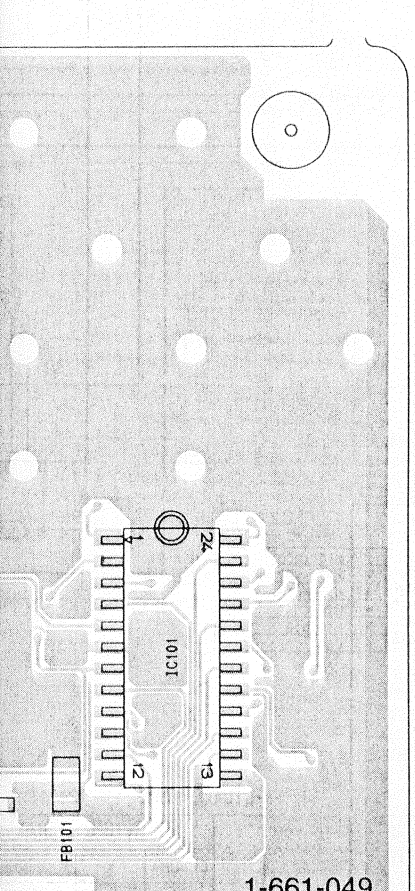
Note : There is no change in the schematic diagram. Refer to page 4-61 in the FXE-100P service manual.

There

1-661-049

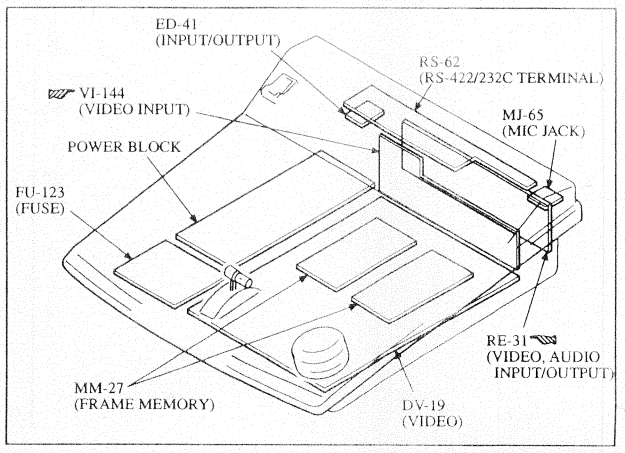


There are few cases that the part printed on this diagram isn't mounted in this model.



VI-144 BOARD

CN101	G-3	IC210	K-2	Q202	B-7
CN102	K-11	IC211	H-3	Q203	J-7
CN103	K-5	IC291	H-4	Q204	J-7
CN104	G-2			Q205	B-7
CN105	G-1	Q101	K-13	Q206	K-7
		Q102	A-13	Q207	B-3
IC101	J-14	Q103	K-12	Q208	B-3
IC104	B-13	Q104	K-12	Q209	B-6
IC105	C-13	Q105	B-12	Q210	B-7
IC106	B-11	Q106	K-12	Q211	C-6
IC107	K-10	Q109	B-12	Q212	C-6
IC191	J-9	Q110	B-12	Q213	C-4
IC201	J-9	Q111	B-12	Q214	J-20
IC204	B-8	Q112	C-12	Q215	J-20
IC205	C-8	Q113	B-10	Q216	B-3
IC206	C-5	Q114	J-10		
IC207	J-4	Q115	J-10		
IC208	K-3	Q200	B-2		
IC209	K-3	Q201	J-7		

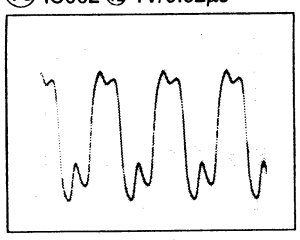


DV-19 (VIDEO) SCHEMATIC DIAGRAM

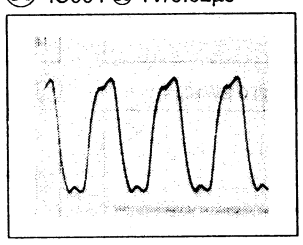
— Ref. No. : DV-19 Board; 7,000 Series —

• See page 4-82 in the FXE-100P service manual for DV-19 BOARD printed wiring board

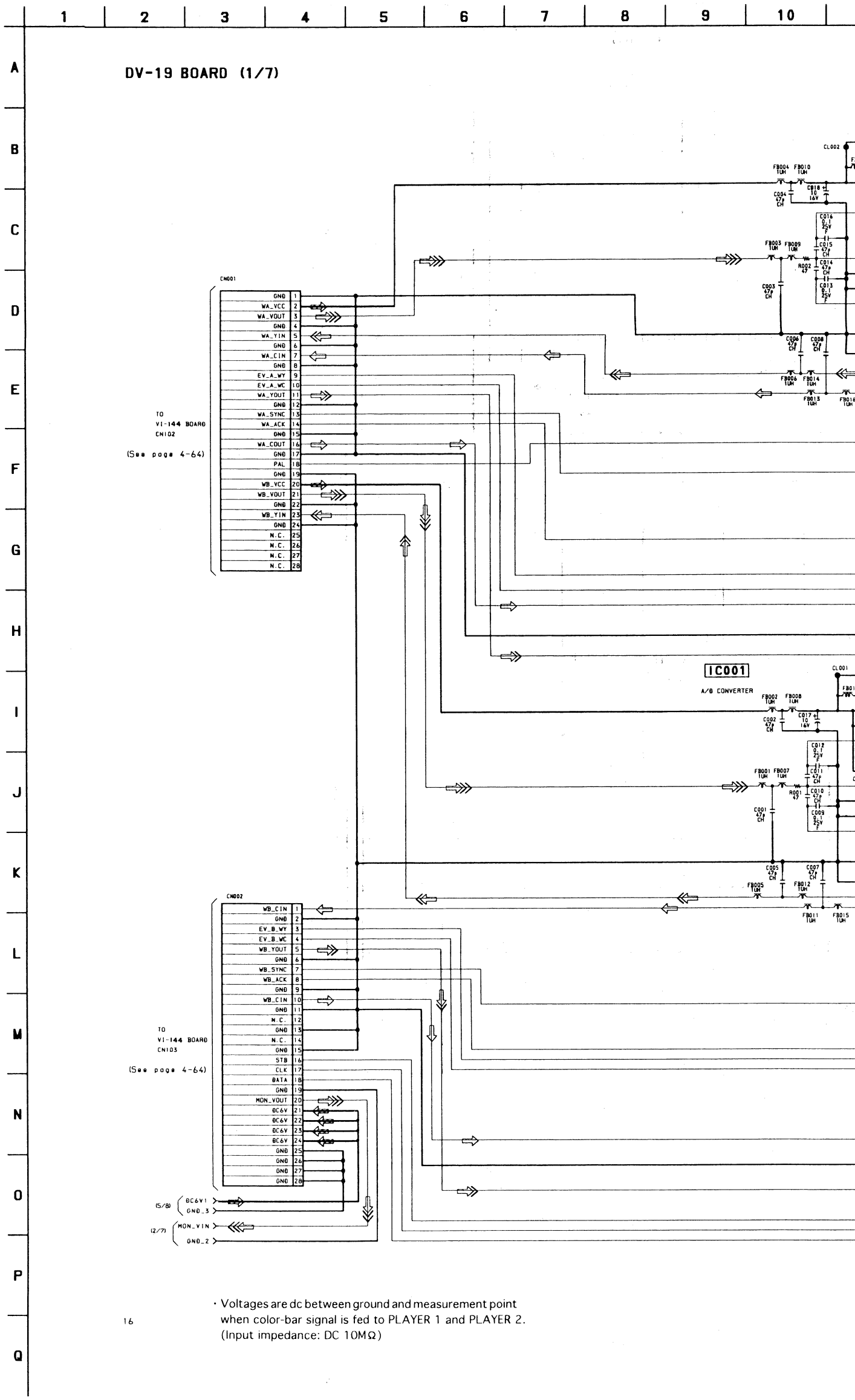
⑩ IC002 ⑫ 1V/0.02µs



⑯ IC004 ⑳ 1V/0.02µs



DV-19 BOARD (1/7)



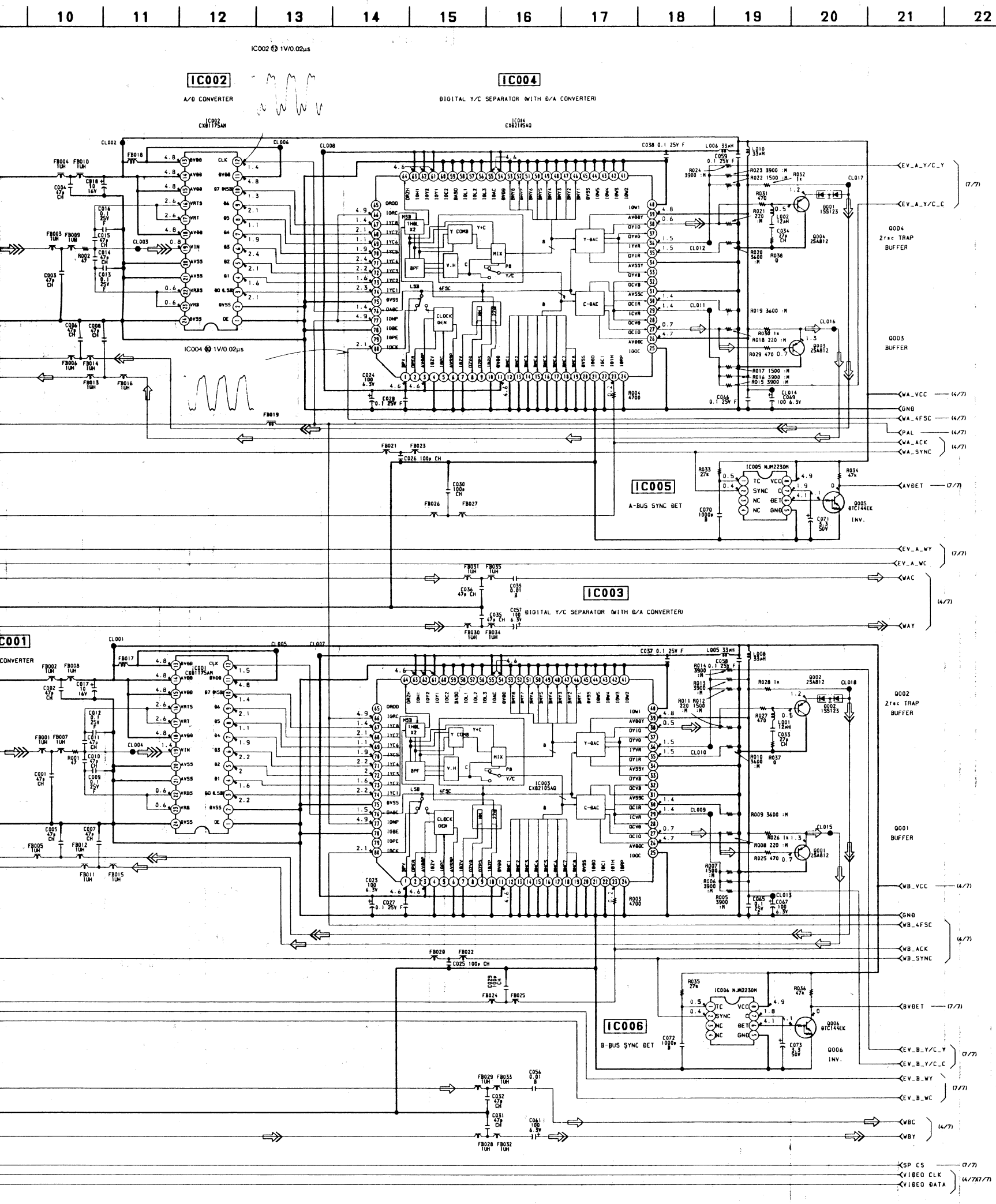
· Voltages are dc between ground and measurement point when color-bar signal is fed to PLAYER 1 and PLAYER 2. (Input impedance: DC 10MΩ)

16

• SIGNAL PATH (ANALOG)

VIDEO SIGNAL			AUDIO SIGNAL
CHROMA	Y	Y/CHROMA	
⇨	⇨	⇨	

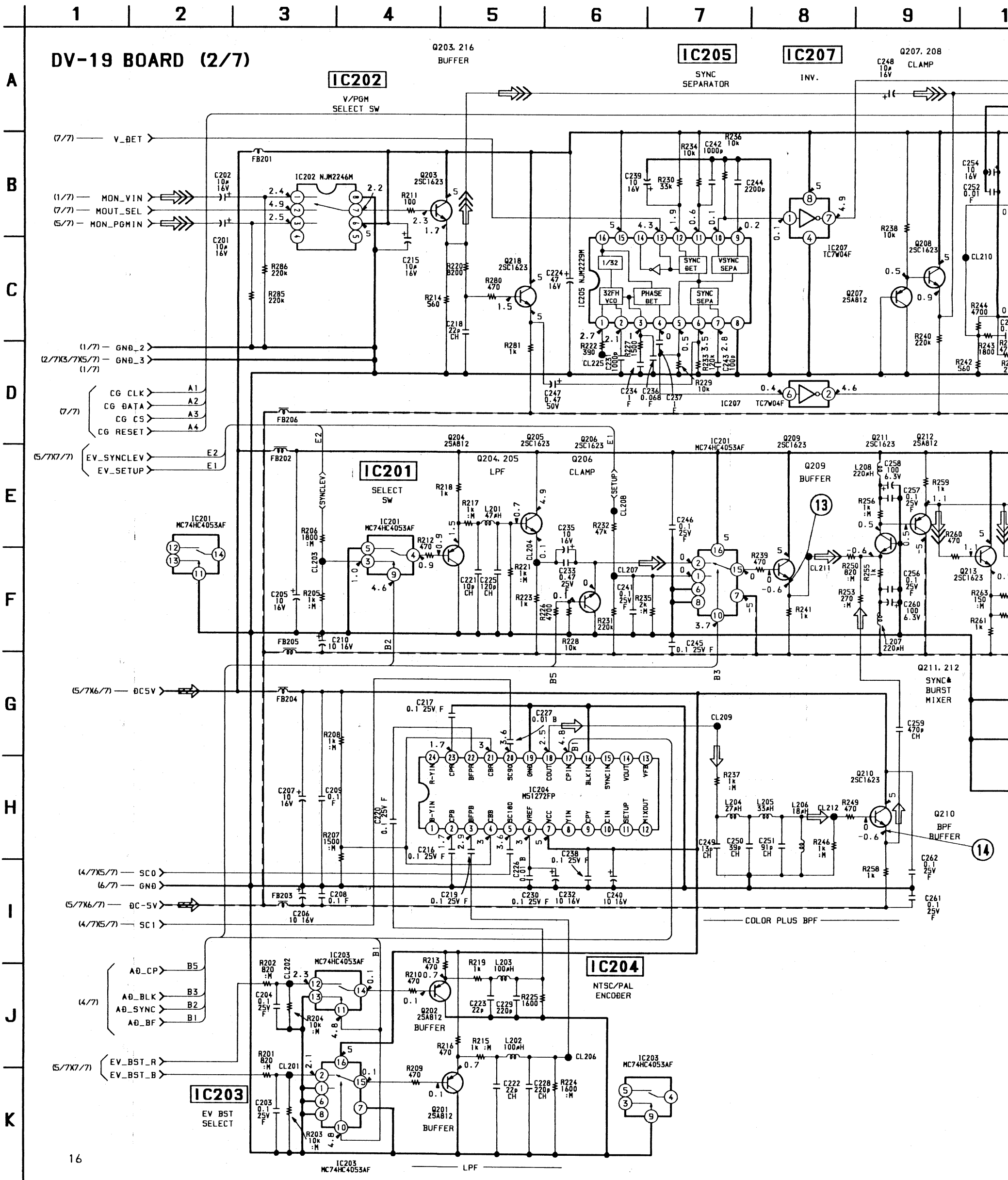
D printed wiring board.

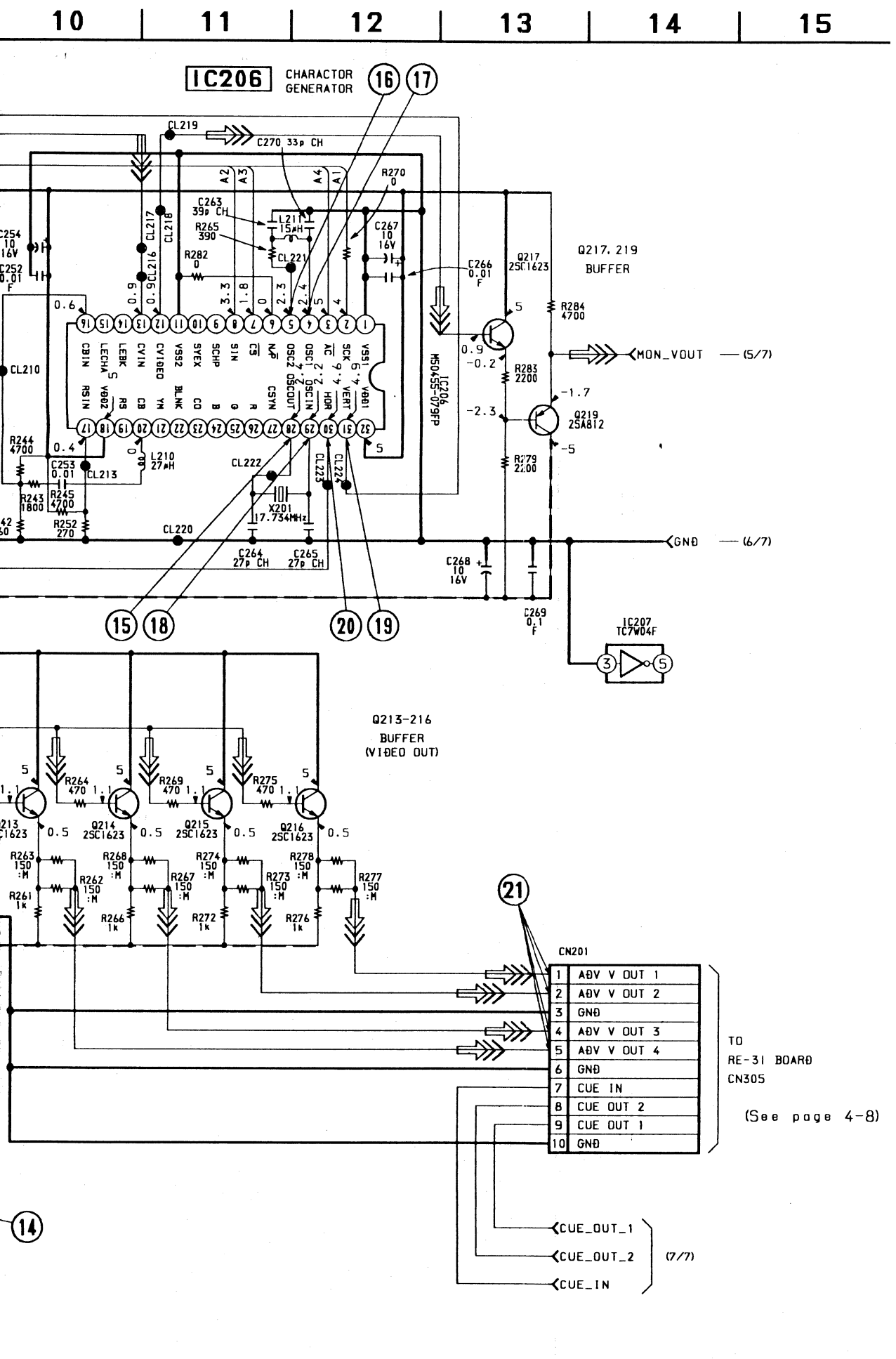


DV-19 (VIDEO) SCHEMATIC DIAGRAM

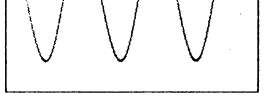
— Ref. No. : DV-19 Board; 7,000 Series —

• See page 4-82 in the FXE-100P service manual for DV-19 BOARD printed wiring board.





⑬ Q209 Ⓔ 0.2V/20µs

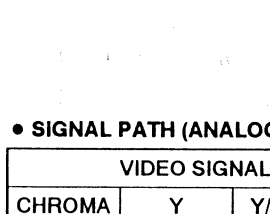


⑱ IC206 ㉙ 1V/0.02µs

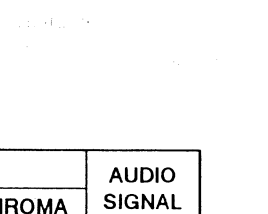
⑭ Q210 Ⓔ 0.2V/10µs

⑲ IC206 ㉛ 2V/5ms

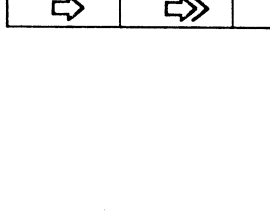
⑮ IC206 ㉘ 1V/0.02µs



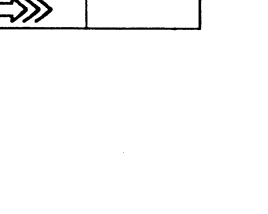
⑳ IC206 ㉚ 2V/10µs



⑯ IC206 ⑤ 1V/0.05µs



㉑ CN201 ①, ② 0.5V/20µs



⑰ IC206 ④ 1V/0.05µs

- Voltages are dc between ground and measurement point when color-bar signal is fed to PLAYER 1 and PLAYER 2. (Input impedance: DC 10MΩ)

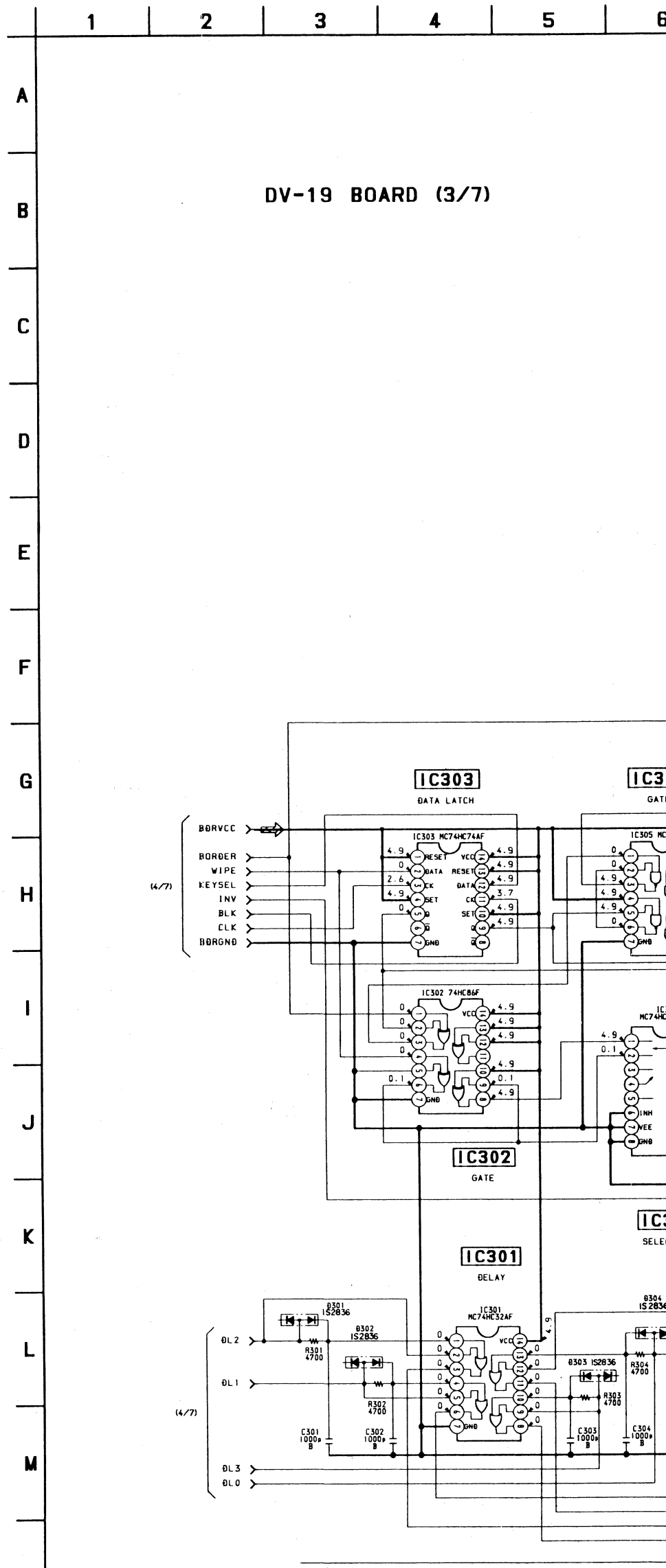
• SIGNAL PATH (ANALOG)

VIDEO SIGNAL			AUDIO SIGNAL
CHROMA	Y	Y/CHROMA	
⇨	⇨	⇨	

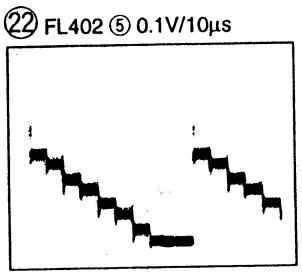
DV-19 (VIDEO) SCHEMATIC DIAGRAM

— Ref. No. : DV-19 Board; 7,000 Series —

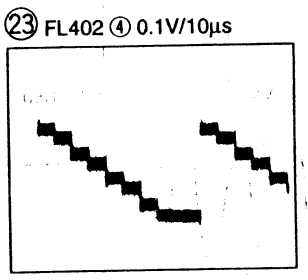
• See page 4-82 in the FXE-100P service manual for DV-19 BOARD printed wiring board.



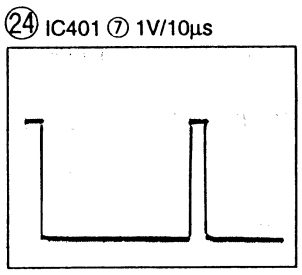
22 FL402 ⑤ 0.1V/10µs



23 FL402 ④ 0.1V/10µs



24 IC401 ⑦ 1V/10µs



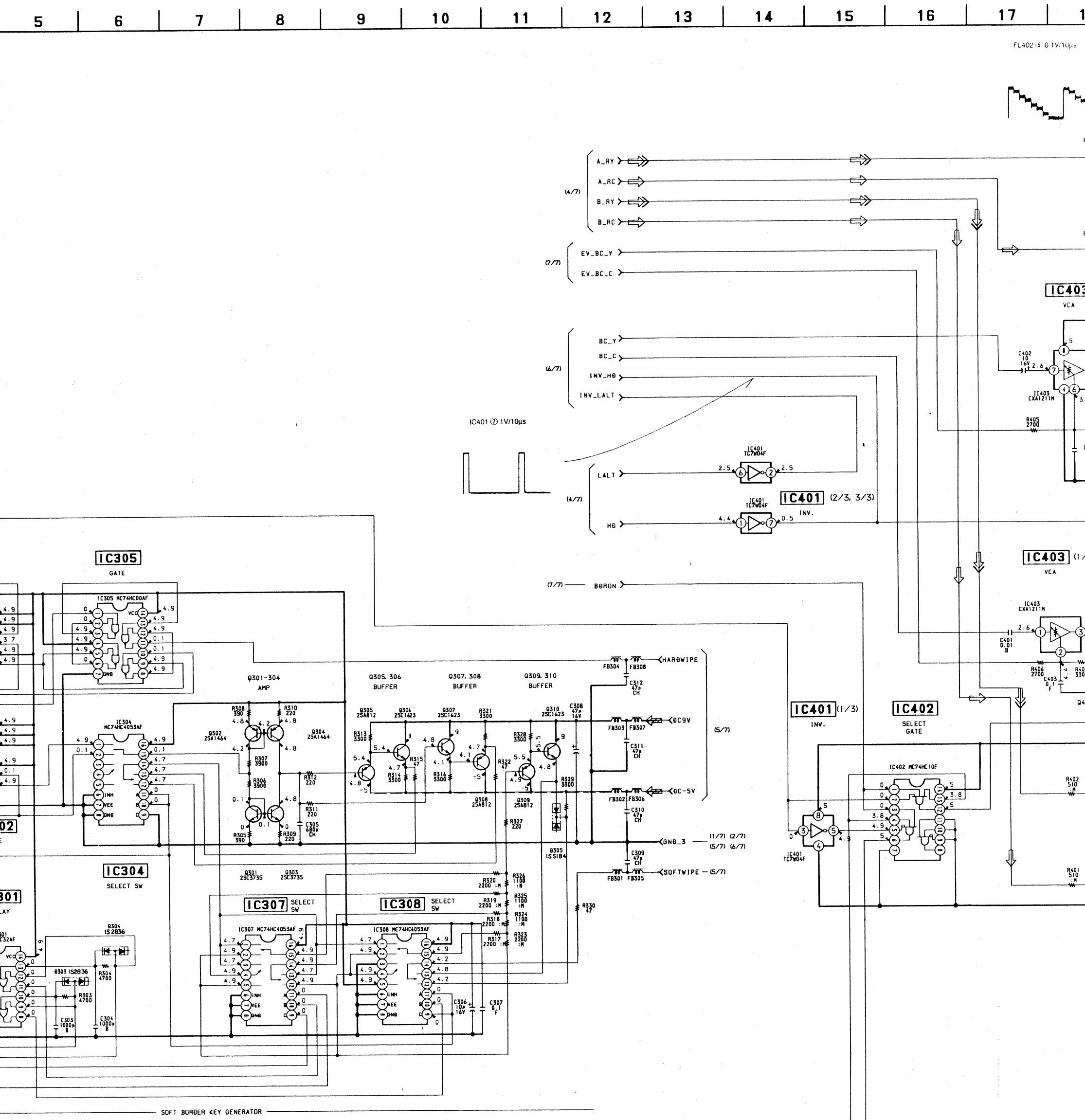
16

• Voltages are dc between ground and measurement point when color-bar signal is fed to PLAYER 1 and PLAYER 2. (Input impedance: DC 10MΩ)

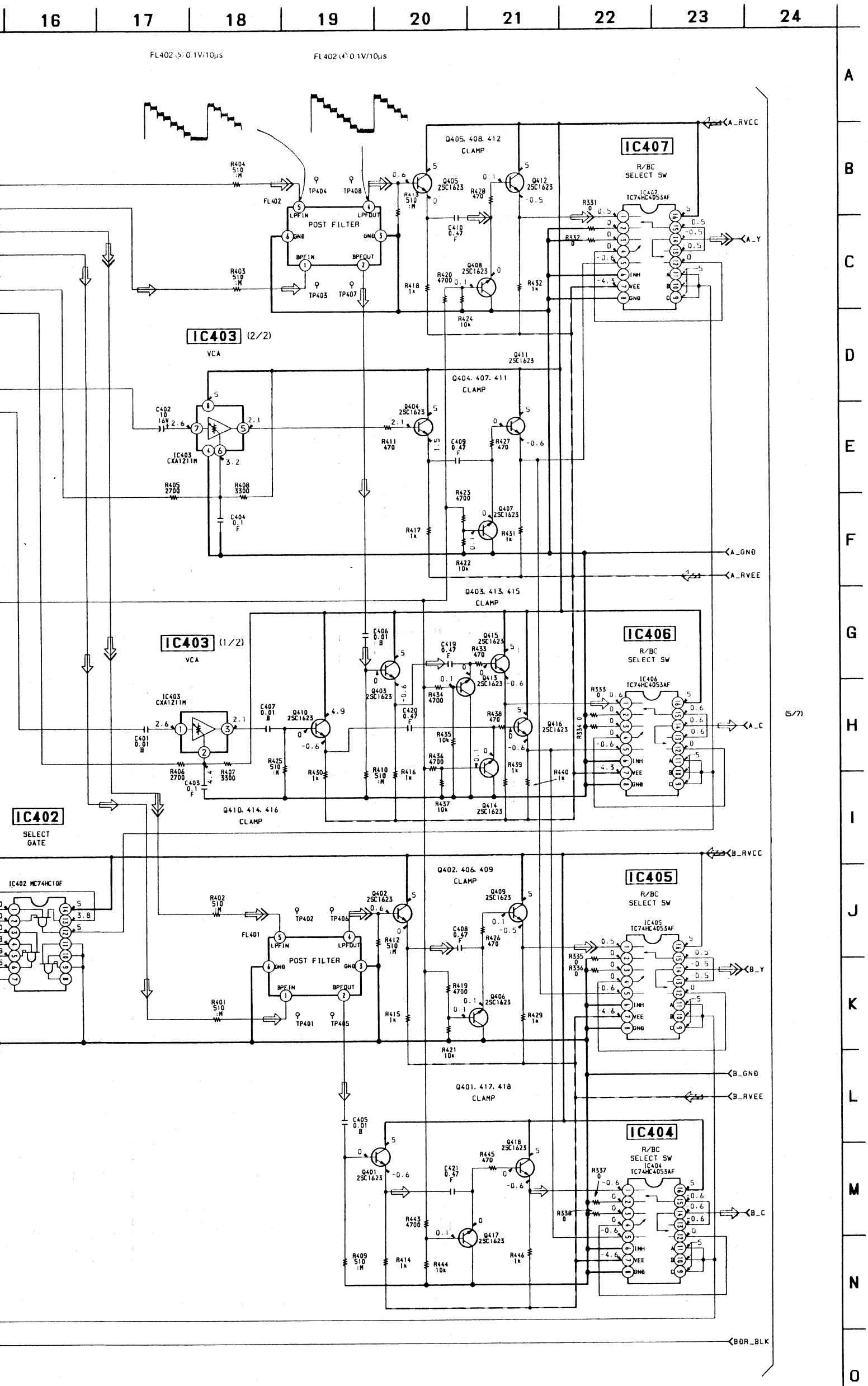
• **SIGNAL PATH (ANALOG)**

VIDEO SIGNAL			AUDIO SIGNAL
CHROMA	Y	Y/CHROMA	
⇨	⇨		

printed wiring board.



and measurement point
PLAYER 1 and PLAYER 2.


16
17
18
19
20
21
22
23
24
A
B
C
D
E
F
G
H
I
J
K
L
M
N
O
FL402 (5) 0.1V/10µs
FL402 (4) 0.1V/10µs
IC407
R/BC SELECT SW
Q405. 408. 412 CLAMP
IC403 (2/2)
VCA
Q404. 407. 411 CLAMP
IC403 (1/2)
VCA
Q403. 413. 415 CLAMP
IC406
R/BC SELECT SW
IC402
SELECT GATE
Q410. 414. 416 CLAMP
IC405
R/BC SELECT SW
Q402. 406. 409 CLAMP
Q401. 417. 418 CLAMP
IC404
R/BC SELECT SW
POST FILTER
A_RVCC
A_Y
A_GND
A_RVEE
A_C
B_RVCC
B_Y
B_GND
B_RVEE
B_C
BDR_BLK
(5/7)

DV-19 (VIDEO) SCHEMATIC DIAGRAM

— Ref. No. : DV-19 Board; 7,000 Series —

• See page 4-82 in the FXE-100P service manual for DV-19 BOARD printed wiring board.

DV-19 BOARD (4/7)

• Voltages are dc between ground and measurement point when color-bar signal is fed to PLAYER 1 and PLAYER 2. (Input impedance: DC 10MΩ)

(See page 4-32)

TO MM-27 BOARD (A-LINE) CN101

(See page 4-38)

TO MM-27 BOARD (A-LINE) CN201

IC513 +5V REG.

IC512 +5V REG.

IC504 SYNC GENERATOR

IC507 SYNC DRIVER

IC511 READOUT BLKG

IC519 HCENT PHASE SHIFTER

IC517 M.M

IC521 M.M

IC515 M.M

IC508 INV.

IC505 CHROMA HUE PHASE SHIFTER

IC503 M.M

IC501

IC506 M.M

IC502

IC514

IC516 MEMORY CONTROL MICROCOMPUTER

IC522 8-LATCH

IC510 +5V REG.

IC509 +5V REG.

Q501 PAL 908FH VCO

Q502 2SC1623 4FSC OSC

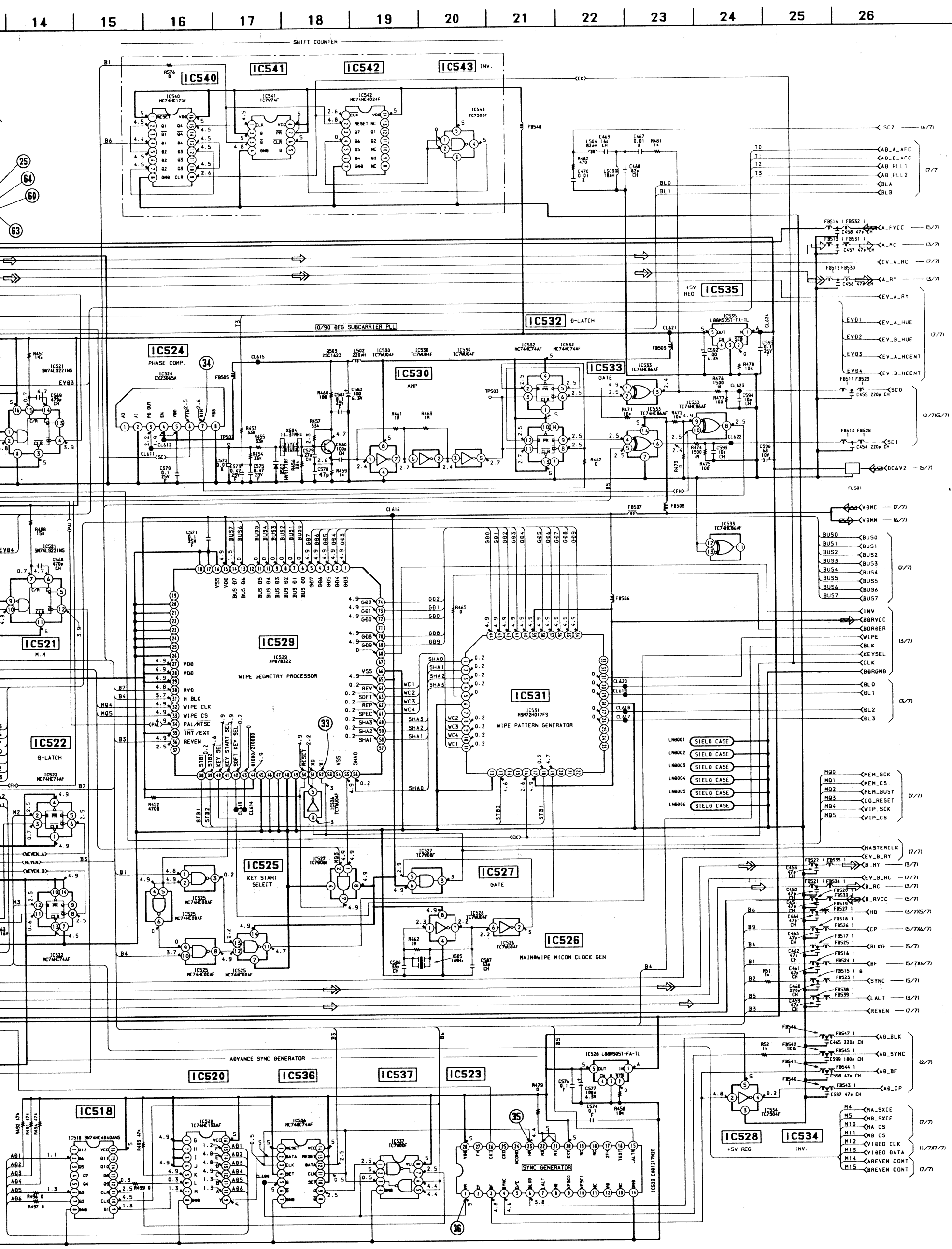
4FSC OSC ADJ

TO MM-27 BOARD (B-LINE) CN101

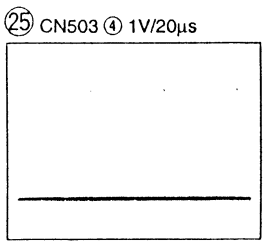
(See page 4-32)

TO MM-27 BOARD (B-LINE) CN201

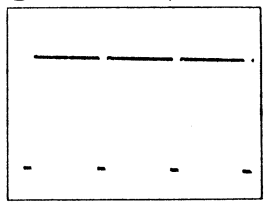
(See page 4-38)


SHIFT COUNTER
IC540
IC541
IC542
IC543 INV.
IC540 MC74HC175F
IC541 TC7W74F
IC542 MC74HC4024F
IC543 TC7S00F
FBS48
<CK>
SC2 (6/7)
T0
T1
T2
T3
A0_A_AFC
A0_B_AFC
A0_PLL1
A0_PLL2
(7/7)
BL0
BL1
BLA
BLB
C469 16p CH
C447 0.01 B
L504 82uH CH
R481 1k
R487 470
C470 0.01 B
L503 18uH
C468 82p CH
IC524
PHASE COMP.
IC524 CXZ3065A
IC530
AMP
IC532 MC74HC74AF
IC533 TC74HC86AF
GATE
IC535 L80MS05T-FA-TL
+5V REG.
IC535
0/90 DEG SUBCARRIER PLL
IC532 θ-LATCH
FBS09
CL621
CL624
C592 100 6.3V
C599 0.1 25V F
R478 10k
R476 1500 1%
R477 100
C594 10p CH
C623
R471 10k
R472 10k
C593 10p CH
CL622
R474 1500 1%
R475 100
C596 68 10V
R473 0
R467 0
TPS03
R461 1M
R463 1M
R457 33k
C580 100p CH
C581 0.1 25V F
C582 100 6.3V
R440 100
R453 33k
R455 33k
R454 33k
C572 0.01 B
C573 0.47 25V F
C575 0.47 25V F
C570 0.1 25V F
C578 47p
C579 27p CH
R456 33k
R459 1k
XS04 14.31MHz
CL611 (SC)
CL612
CL615
FBS05
FBS10
FBS11
FBS29
SCO
C455 220p CH
(2/7)(5/7)
FBS10
FBS28
SC1
C454 220p CH
OC6VZ (5/7)
FLS01
FBS07
FBS08
CL616
<FH>
B5
VDMC (7/7)
VDMM (6/7)
IC521 SN74LS221NS
M.M
IC521
IC522 MC74HC74AF
θ-LATCH
IC522
<PAL>
<EVEN_A>
<EVEN>
<EVEN_B>
IC529
IC529 μPD78322
WIPE GEOMETRY PROCESSOR
IC531 MSM72H017FS
WIPE PATTERN GENERATOR
IC525 MC74HC00AF
KEY START SELECT
IC525
IC527 TC7W08F
GATE
IC527
IC526 TC74AU04F
IC526
MAIN&WIPE MICOM CLOCK GEN
XS05 10MHz
C584 33p CH
C587 33p CH
R462 1M
ADVANCE SYNC GENERATOR
IC520
IC536
IC537
IC523
IC518
IC518 SN74HC4040ANS
IC520 TC74HC133AF
IC536 MC74HC74AF
IC537 TC7W00F
IC523 CXB1217M20
SYNC GENERATOR
IC528 L80MS05T-FA-TL
C576 0.1 F
C577 100 6.3V
C574 0.1 F
R479 0
R458 10k
IC528
+5V REG.
IC534 TC7S04F
IC534
INV.
SIELO CASE
LNB001
LNB002
LNB003
LNB004
LNB005
LNB006
BUS0
BUS1
BUS2
BUS3
BUS4
BUS5
BUS6
BUS7
(7/7)
INV
BORYCC
BORDER
WIPE
BLK
KEYSEL
CLK
BORGND
(3/7)
BLO
BL1
BL2
BL3
(3/7)
MEM_SCK
MEM_CS
MEM_BUSY
CO_RESET
WIP_SCK
WIP_CS
(7/7)
MASTERCLK
EV_B_RY
B_RY (3/7)
EV_B_RC (7/7)
B_RC (3/7)
B_RVCC (5/7)
H0 (3/7)X5/7)
CP (5/7)X6/7)
BLKG (5/7)
BF (5/7)X6/7)
SYNC (5/7)
LALT (3/7)
REVEN (7/7)
A0_BLK
A0_SYNC
A0_BF
A0_CP
(2/7)
MA_SXCE
MB_SXCE
MA CS
MB CS
VIDEO CLK
VIDEO DATA
AREVEN COMT
BREVEN CONT
(7/7)
(1/7)X7/7)
(7/7)
EV_A_RY
EV_A_RC (7/7)
A_RC (3/7)
A_RVCC (5/7)
A_RY (3/7)
A_PVCC (5/7)
EV01
EV02
EV03
EV04
EV_A_HUE
EV_B_HUE
EV_A_HCENT
EV_B_HCENT
(7/7)
FBS14 FBS32
C458 47p CH
FBS13 FBS31
C457 47p CH
FBS12 FBS30
C456 47p CH
FBS11 FBS29
C455 220p CH
FBS10 FBS28
C454 220p CH
FBS22 FBS35
C453 47p CH
FBS21 FBS34
C452 47p CH
FBS20 FBS33
C451 47p CH
FBS19 FBS27
C444 47p CH
FBS18 FBS26
C463 47p CH
FBS17 FBS25
C462 47p CH
FBS16 FBS24
C461 47p CH
FBS15 FBS23
C460 270p CH
FBS38 FBS39
C459 47p CH
FBS46 FBS47
C445 220p CH
FBS42 FBS45
C599 180p CH
FBS41 FBS44
C598 47p CH
FBS40 FBS43
C597 47p CH
R51 1k
R52 1kΩ
R492 47k
R493 47k
R494 47k
R495 47k
R496 0
R497 0
R499 0
R452 470Ω
R465 0
CL499
CL613
CL614
CL617
CL618
CL619
CL620
FBS06
(CK)
(FH)
(PAL)
(EVEN_A)
(EVEN)
(EVEN_B)
(SC)
(CK)
(FH)
B1
B2
B3
B4
B5
B6
B7
B9
M2
M3
M4
M5
M10
M11
M12
M13
M14
M15
MQ4
MQ5
33
34
35
36

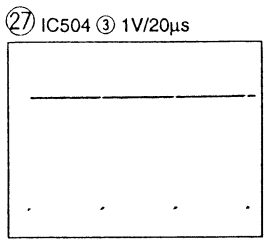
㉕ CN503 ④ 1V/20µs



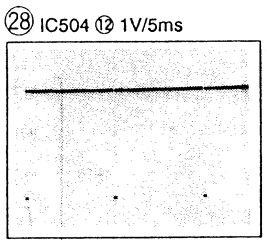
㉖ IC504 ⑧ 1V/20µs



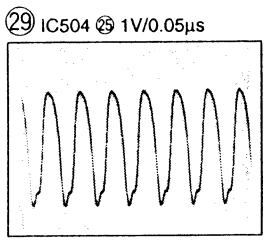
㉗ IC504 ③ 1V/20µs



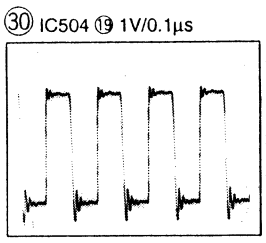
㉘ IC504 ⑫ 1V/5ms



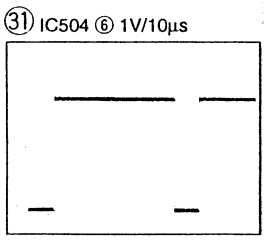
㉙ IC504 ㉕ 1V/0.05µs



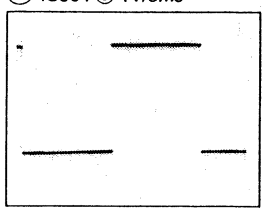
㉚ IC504 ⑲ 1V/0.1µs



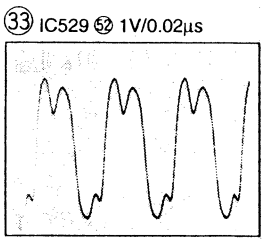
㉛ IC504 ⑥ 1V/10µs



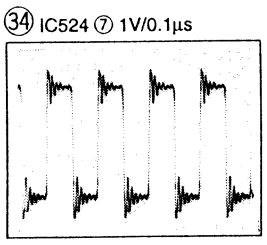
㉜ IC504 ⑤ 1V/5ms



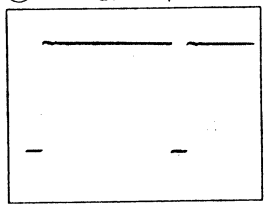
㉝ IC529 ㊷ 1V/0.02µs



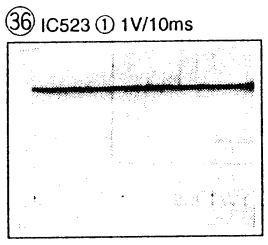
㉞ IC524 ⑦ 1V/0.1µs



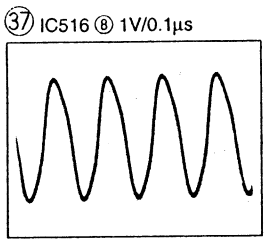
㉟ IC523 ㉓ 1V/10µs



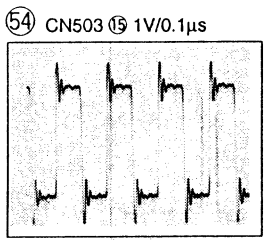
㊱ IC523 ① 1V/10ms



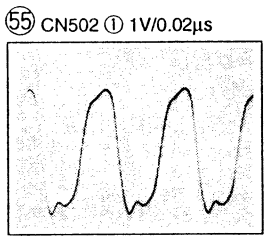
㊲ IC516 ⑧ 1V/0.1µs



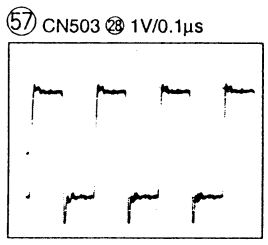
㊴ CN503 ⑮ 1V/0.1µs



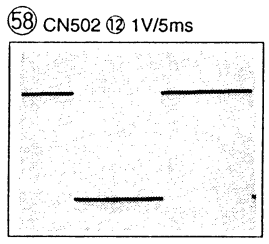
㊵ CN502 ① 1V/0.02µs



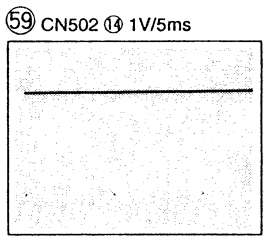
㊼ CN503 ㉘ 1V/0.1µs



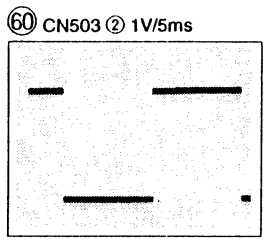
㊽ CN502 ⑫ 1V/5ms



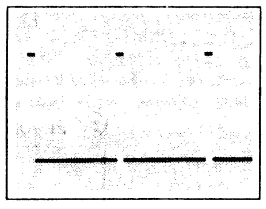
㊾ CN502 ⑭ 1V/5ms



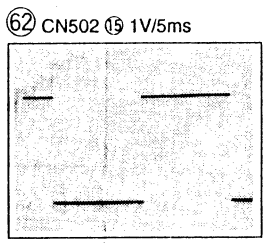
㊿ CN503 ① 1V/5ms



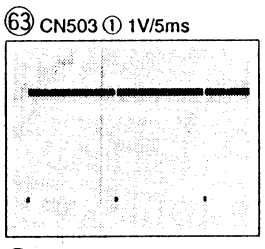
(61) CN502 ⑤ 1V/10µs



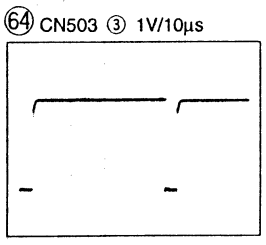
(62) CN502 ⑮ 1V/5ms



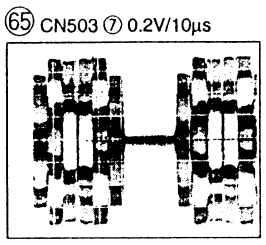
(63) CN503 ① 1V/5ms



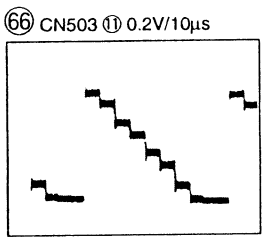
(64) CN503 ③ 1V/10µs



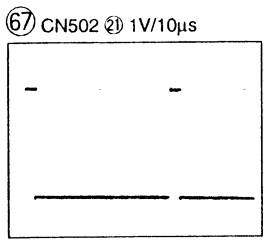
(65) CN503 ⑦ 0.2V/10µs



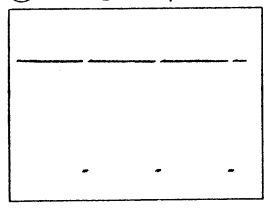
(66) CN503 ⑪ 0.2V/10µs



(67) CN502 ㉑ 1V/10µs



(68) IC504 ④ 1V/20µs



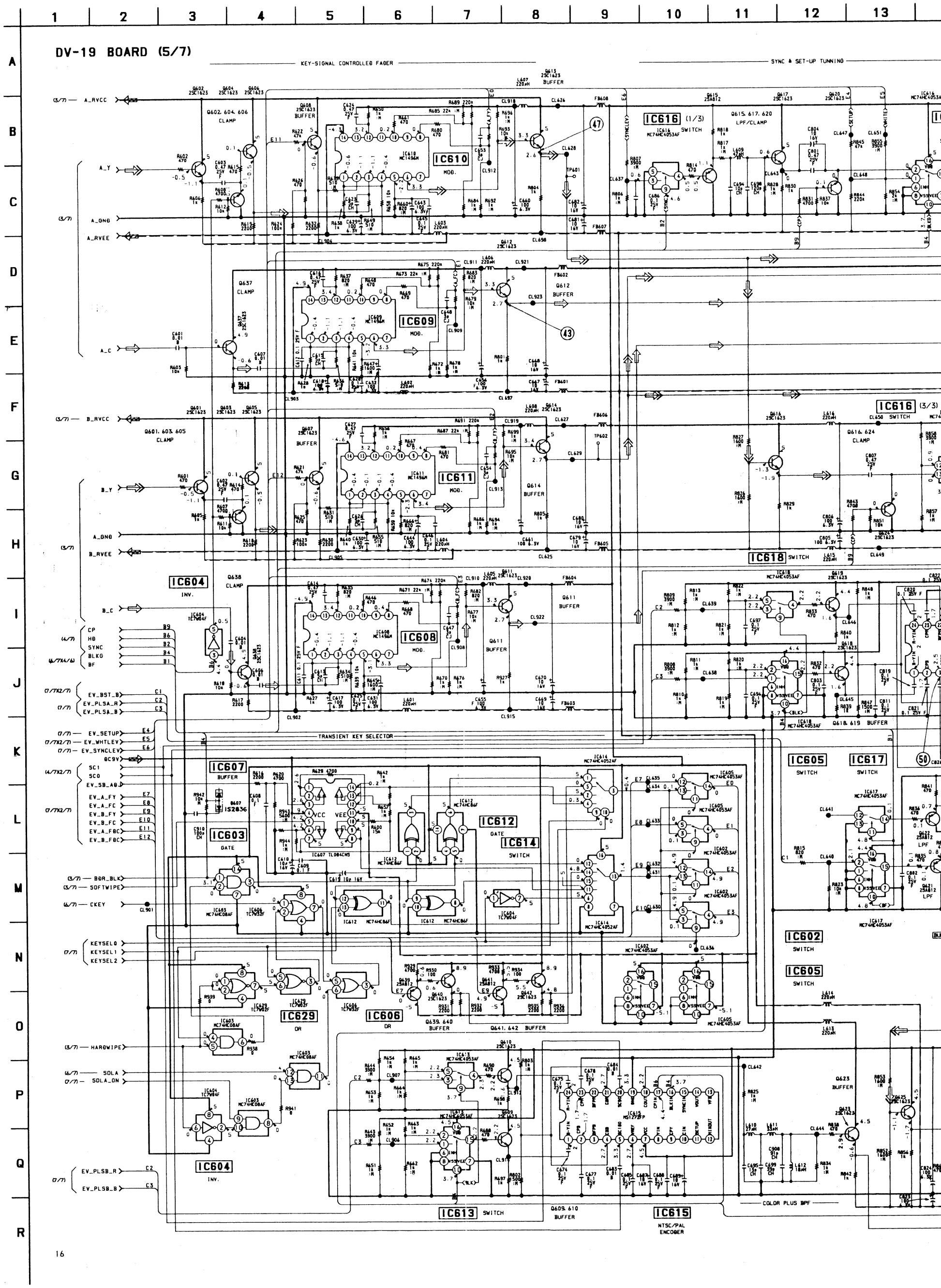
• SIGNAL PATH (ANALOG)

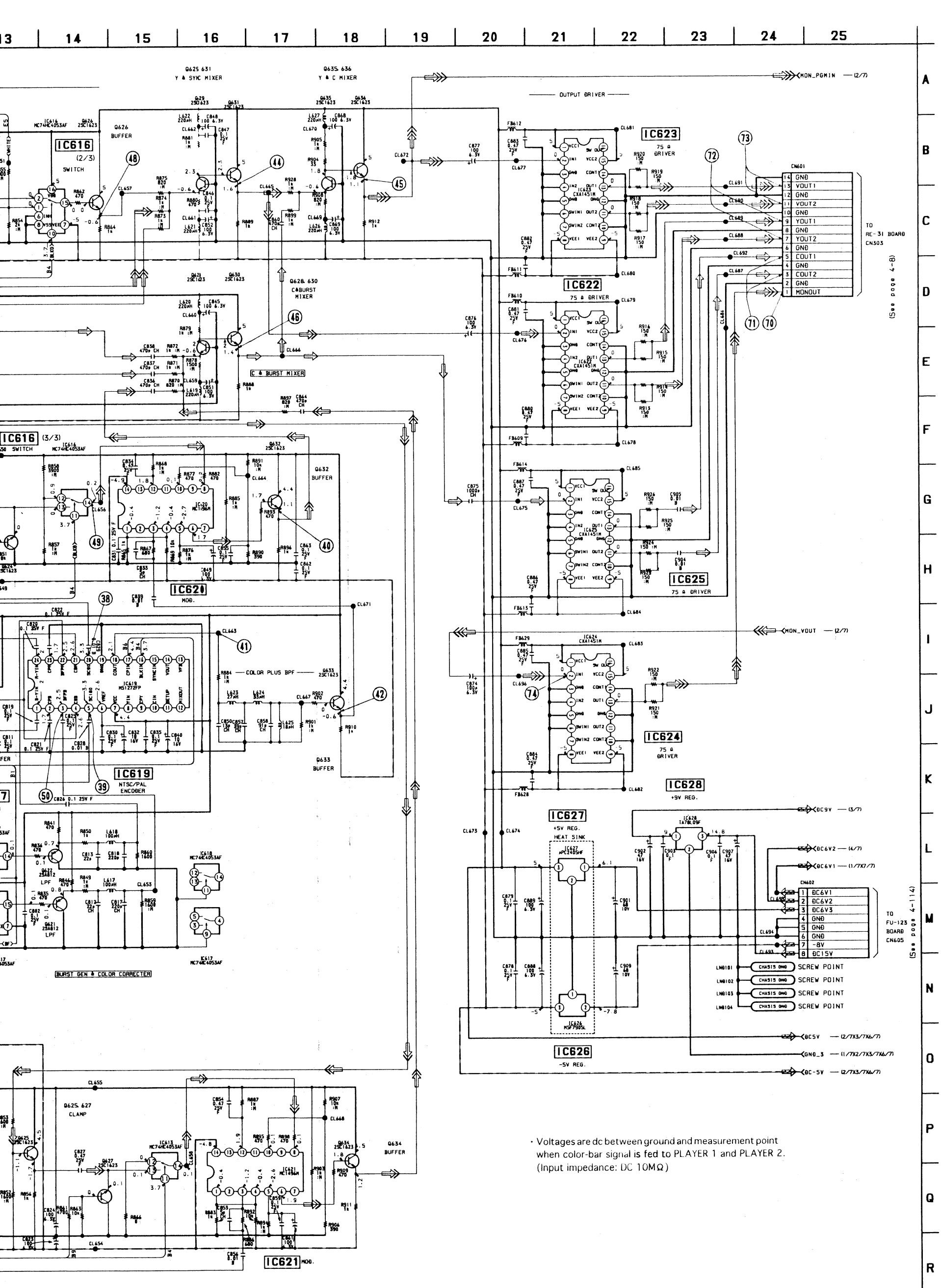
VIDEO SIGNAL			AUDIO SIGNAL
CHROMA	Y	Y/CHROMA	
⇨	⇨		

DV-19 (VIDEO) SCHEMATIC DIAGRAM

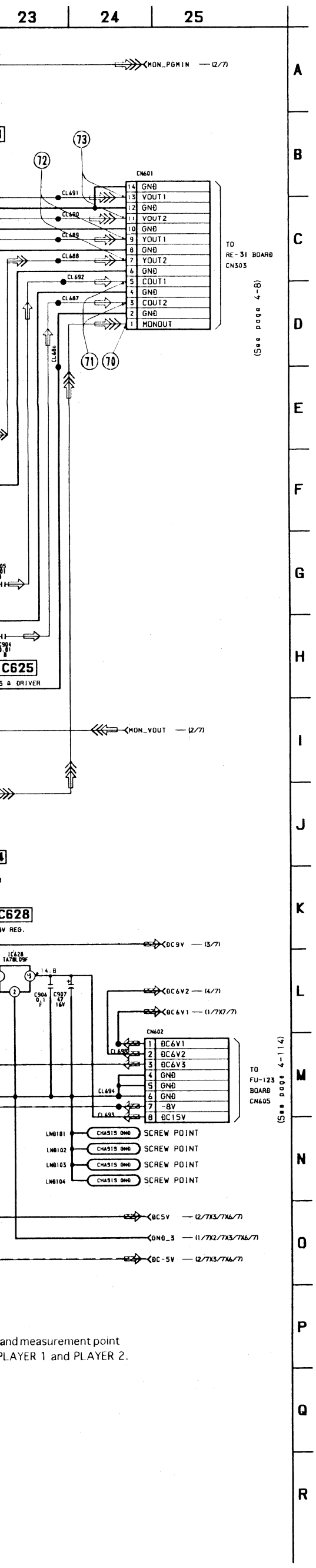
— Ref. No. : DV-19 Board; 7,000 Series —

• See page 4-82 in the FXE-100P service manual for DV-19 BOARD printed wiring board.



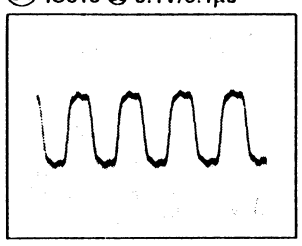


· Voltages are dc between ground and measurement point when color-bar signal is fed to PLAYER 1 and PLAYER 2. (Input impedance: DC 10MΩ)

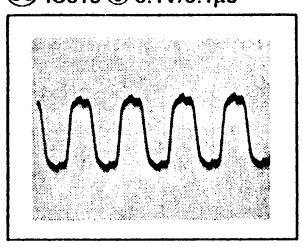


and measurement point
PLAYER 1 and PLAYER 2.

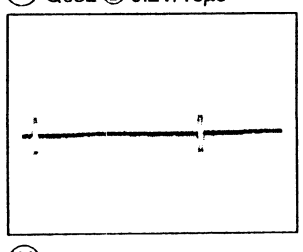
(38) IC619 (20) 0.1V/0.1µs



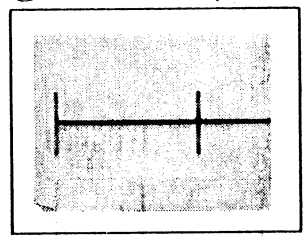
(39) IC619 (5) 0.1V/0.1µs



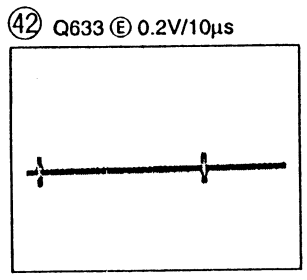
(40) Q632 (E) 0.2V/10µs



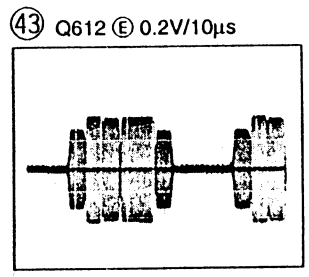
(41) IC619 (19) 0.2V/10µs



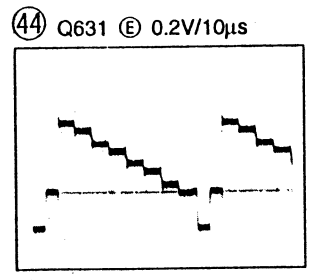
(42) Q633 (E) 0.2V/10µs



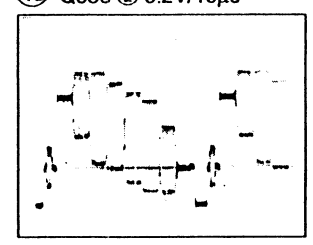
(43) Q612 (E) 0.2V/10µs



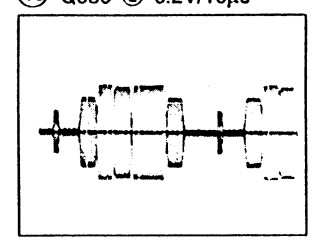
(44) Q631 (E) 0.2V/10µs



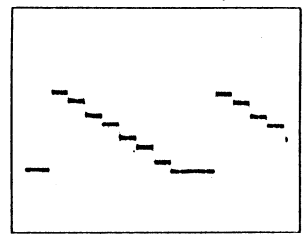
(45) Q636 (E) 0.2V/10µs



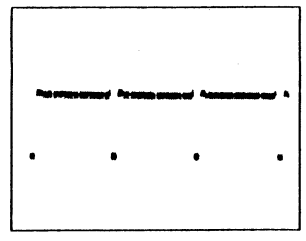
(46) Q630 (E) 0.2V/10µs



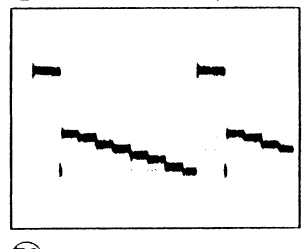
(47) Q613 (E) 0.2V/10µs



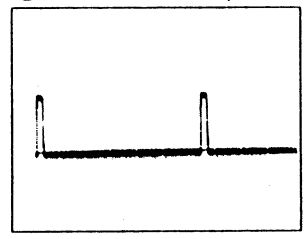
(48) Q626 (E) 0.1V/20µs



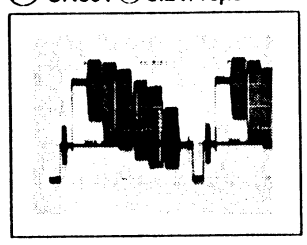
(49) IC616 (14) 0.2V/10µs



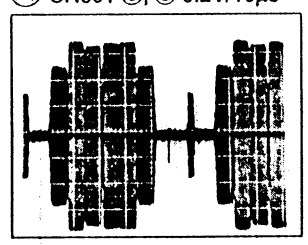
(50) IC619 (3) 0.5V/10µs



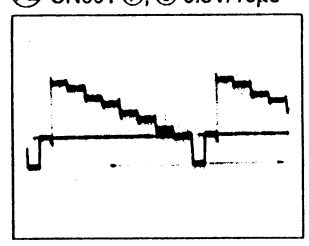
(70) CN601 (1) 0.2V/10µs



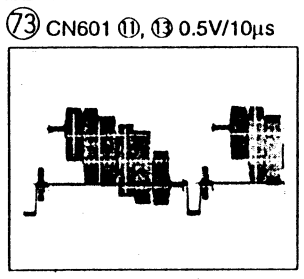
(71) CN601 (3), (5) 0.2V/10µs



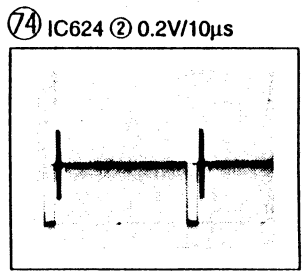
(72) CN601 (7), (9) 0.5V/10µs



(73) CN601 (11), (13) 0.5V/10µs



(74) IC624 (2) 0.2V/10µs



• **SIGNAL PATH (ANALOG)**

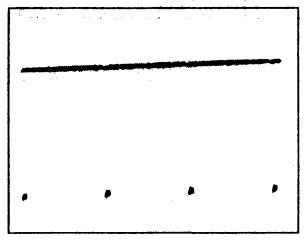
VIDEO SIGNAL			AUDIO SIGNAL
CHROMA	Y	Y/CHROMA	
⇨	⇨	⇨	

DV-19 (VIDEO) SCHEMATIC DIAGRAM

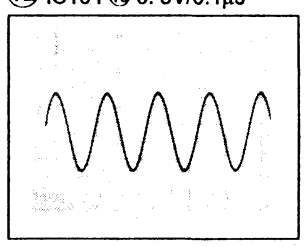
— Ref. No. : DV-19 Board; 7,000 Series —

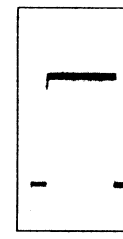
• See page 4-82 in the FXE-100P service manual for DV-19 BOARD printed wiring board.

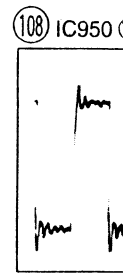
⑪ IC104 ⑧ 1V/20µs



⑫ IC104 ⑩ 0. 5V/0.1µs







DV-19 BOARD (6/7)

IC951 M.M

IC955 ANØ

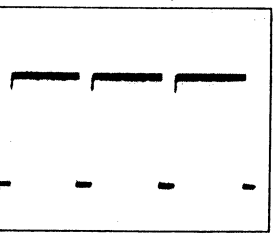
IC955 TC7508F

IC950 MB620461 LUMI KEY/ CHROMA KEY

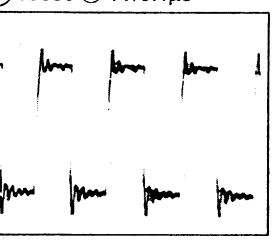
IC952 CX01171M Ø/A CONVERTER

IC954 CX01171M Ø/A CONVERTER

③ IC950 ⑰ 1V/20µs



⑱ IC950 ⑪ 1V/0.1µs



12 13 14 15 16 17 18 19 20 21 22 23 24

(5/7) CKEY

(6/7) EV_HUE_RANGE, EV_HUE_B, EV_HUE_R

FB951 FB952 FB953 FB954 FB955 FB956

θC5V (5/7X2/7)

θC-5V

GNθ (2/7)

GNθ (4/7)

GNθ_3 (1/7X2/7X3/7X5/7)

C973 47p CH

C974 47p CH

SOLA (5/7)

INV_Hθ

BC_Y

A_GNθ

BC_C

B_GNθ

(3/7)

(4/7) SC2

(4/7X5/7) BF

(7/7) BC_50

(3/7) INV_LALT

BC_R

BC_G

BC_B

BC_B/W

(7/7)

(4/7X5/7) BLKG

CL101 CL102 CL103 CL104 CL105 CL106 CL107 CL108

TP101 TP102 TP103

FB101 FB102 FB103 FB104 FB105 FB106

Q102, 104 CLAMP

Q101, 103 CLAMP

Q108 BUFFER

Q109 BUFFER

Q110 MIXER

Q111 BUFFER

Q112 MIXER

Q113 REF. VOLTAGE BUFFER

Q114, 115 NAB

Q116, 121, 119 AMP

Q117 BUFFER

Q118 CLAMP

Q105-107 BUFFER

IC101 MC74HC08F GATE (BLGK)

IC102 MC1496M B-Y MOθ.

IC103 MC1496M R-Y MOθ.

IC104 V7040 NTSC/PAL ENCOθER

IC105 MC1496M R-Y MOθ.

IC106 MC1496M B-Y MOθ.

IC107 TC74HC4053F SWITCH

IC108 µPC324G2

IC109 TL026CP8

Q101 2SC1623

Q102 2SC1623

Q103 2SC1623

Q104 2SC1623

Q105 2SC1623

Q106 2SC1623

Q107 2SC1623

Q108 2SA812

Q109 2SA812

Q110 2SC1623

Q111 2SC1623

Q112 2SC1623

Q113 2SA812

Q114 2SA812

Q115 2SA812

Q116 2SC1623

Q117 2SC1623

Q118 2SC1623

Q119 2SC1623

Q120 2SC1623

Q121 2SC1623

Q122 2SC1623

D101 1SS184

D102 1SS123

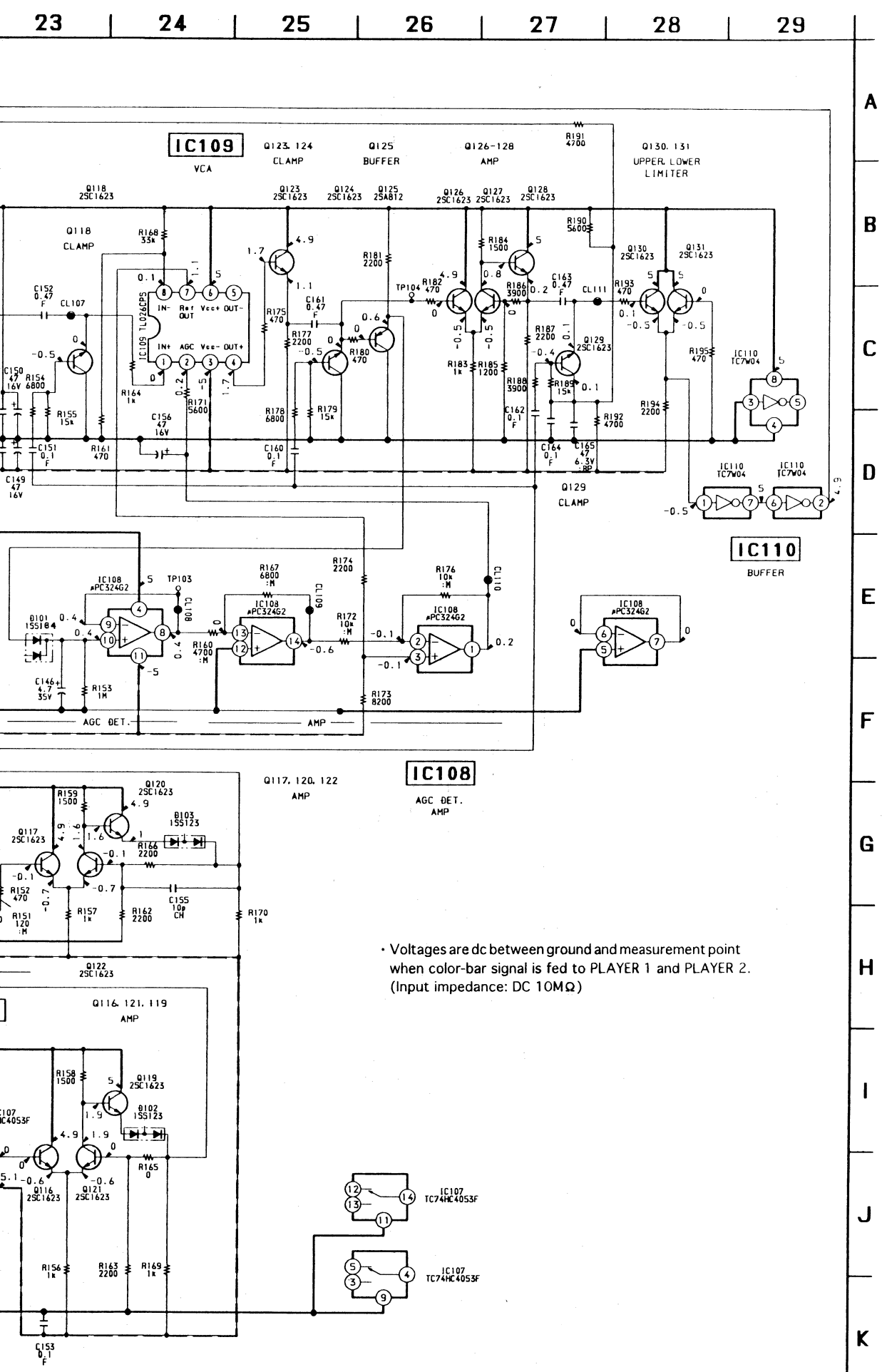
D103 1SS123

D104 1S2836

BPF

DELAY

AGC θET.


IC109
VCA
Q123, 124
CLAMP
Q125
BUFFER
Q126-128
AMP
Q130, 131
UPPER, LOWER
LIMITER
Q118
CLAMP
Q129
CLAMP
IC110
BUFFER
IC108
AGC DET.
AMP
Q117, 120, 122
AMP
Q116, 121, 119
AMP
• Voltages are dc between ground and measurement point when color-bar signal is fed to PLAYER 1 and PLAYER 2. (Input impedance: DC 10MΩ)

DV-19 (VIDEO) SCHEMATIC DIAGRAM

— Ref. No. : DV-19 Board; 7,000 Series —

• See page 4-82 in the FXE-100P service manual for DV-19 BOARD printed wiring board.

DV-19 BOARD (7/7)

IC701 +5V REG.

IC707 D/A

IC704 D/A

IC705 D/A

IC706 D/A

IC730 MAIN MICROCOMPUTER

IC711 I/O EXPANDER

IC709 IC710 EEROM
SETTING DATA
TUNNING DATA
EFFECT DATA

IC703 RESET

Q701 Q702 OUTPUT BUFFER

Q703 INPUT BUFFER

- Voltages are dc between ground and measurement point when color-bar signal is fed to PLAYER 1 and PLAYER 2. (Input impedance: DC 10MΩ)

)ARD printed wiring board.

● **SIGNAL PATH (ANALOG)**

VIDEO SIGNAL			AUDIO SIGNAL
CHROMA	Y	Y/CHROMA	➡

9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23

A B C D E F G H I J K

(2/7)
(1/7) (4/7)
(1/7)
(4/7)

Q701 Q702 OUTPUT BUFFER
Q703 INPUT BUFFER
Q701 Q702 0ιC144EK
Q703 0ιC144EK
R713 10k
R714 10k
R715 10k
FB724 CUE_IN
FB725 CUE_OUT_2 (2/7)
FB726 CUE_OUT_1

69

CN701 21P

MS1	FB721	CL709	21 READY
			20 GND
CG2	FB720	CL716	19 CG DATA
			18 GND
CG0	FB719	CL715	17 CG CS
			16 GND
CG1	FB718	CL714	15 CG SCK
		CL717	
FB355	FB717	CL713	14 R E/O
			13 RVD
			12 GND
MS3	FB716	CL712	11 DATA FROM MASTER
			10 GND
MS4	FB715	CL711	9 DATA TO MASTER
			8 GND
MS2	FB714	CL710	7 SCK
			6 GND
MS0	FB713	CL708	5 MASTER CS
		CL707	4 RESET
	FB727	CL718	3 CUE OUT 1
	FB728	CL719	2 CUE OUT 2
	FB729	CL722	1 CUE IN

CL706

TO CP-75 BOARD CN500 <SEE PAGE 165>

M00 M01 M02 M03 M04 M05 M06
BUS0 BUS1 BUS2 BUS3
I/O EXPANDER
IC730
MAIN MICROCOMPUTER
IC730 M37702M4
A0 P30 R/W
A1 P31 BHE
A2 P32 ALE
TOR0 P33 HLDA
BUS4 BUS5 BUS6 BUS7
A00 A01 A02
R717 0
CL783
EEROM INTERFACE
EVR DAC S/P CS
RESET
CNVSS
BYTE
HOLD
BA0/CLK
51
FB705 CL734
IC703 58054ALB
IC703
RESET
52
R712 47k
R716 47k
BA2 BA1 BA0
FB704
IC709
IC710
EEROM
SETTING DATA
TUNNING DATA
EFFECT DATA
IC709 M6M80021FP
IC710 M6M80021FP
R725 10k
CL735
FB703
C713 0.1 16V F
C715 10 16V
R726 10k
C714 0.1 16V F
C721 10 16V
ER0 ER1 ER2 ER3 ER4 ER5 ER6 ER7
EV11 EV12 EV13 EV14 EV15 EV16 EV17 EV18 EV19 EV20 EV21 EV22 EV23 EV24

IC711
I/O EXPANDER
IC711 CX0109SQ
AUDIO SELECTOR
TRANSIENT KEY SEL
R762 10k CL786
R763 10k CL787
R735 4700
R736 4700
R737 4700
R739 4700
R740 4700
R732 4700
R733 4700
R751 4700
R752 4700
R753 4700
R754 4700
R755 4700
R756 4700
R757 0
R741 10k
R760 4700
R768 4700
CL789 (BLB)
CL788
PE2 PE3 PA0 M0 PA1 M1 PA2 M2 VSS VDD PA3 PA4 B0 PA5 B1 PA6 A0 PA7 A1 PB0 BC_R PB1 BC_G PB2 BC_B PB3 BC_B/W PB4 BLKA PB5 BLKB PB6 BC_50 PB7 BKRON PC0 READ OUT PC1 C0 V DET PC2 A V DET PC3 B V DET PC4 CUE OUT 1 PC5 CUE OUT 2 PC6 CUE IN PC7 PAL/NT
K2 P02 K1 P01 K0 P00
IE2 IE1 IE0

BREVEN CONT (4/7)
AREVEN CONT
MOUT_SEL (2/7)
BLA (4/7)
BLB
KEYSEL2
KEYSEL1
KEYSEL0 (5/7)
SOLA_ON
C767 100p CH
C766 100p CH
C768 100p CH
C710 100p CH
FB723 FB725 FB724 FB771 FB768 FB772 FB773 FB770 FB769 FB353 FB354

MQ0 MEM_SCK
MQ1 MEM_CS
MQ2 MEM_BUSY
MQ3 CO_RESET (4/7)
MQ4 VIP_SCK
MQ5 VIP_CS

BUS0 BUS1 BUS2 BUS3 BUS4 BUS5 BUS6 BUS7 (4/7)

AO FB779 FB780 AAO CL790
A1 FB781 AA1 CL791
BO FB783 BBO CL792
B1 FB785 BB1 CL793
M0 FB787 MM0 CL794
M1 FB789 MM1 CL795
M2 FB791 MM2 CL796
EVA0 CL701
EVB0 CL795
C769 100p CH
C770 100p CH
C771 100p CH
C772 100p CH
C773 100p CH
C774 100p CH
C775 100p CH
FB782 FB784 FB786 FB788 FB790 FB792
EV11 FB795 FB796 EVA0 C777 100p CH
EV12 FB797 FB798 EVB0 C778 100p CH
FB799

10 AU SEL A0
9 AU SEL A1
8 AU SEL B0
7 AU SEL B1
6 M-OUT SEL 0
5 M-OUT SEL 1
4 M-OUT SEL 2
3 GND
2 EV AUDIO A
1 EV AUDIO B

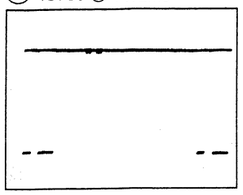
CN702

TO AM-37 BOARD CN003 <SEE PAGE 180>

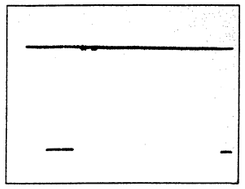
FB351 MASTERCLK (4/7)
BVBET
AVBET (1/7)
FB352
PB0 CL760 FB774 BC_R
PB1 CL761 FB775 BC_G
PB2 CL750 FB776 BC_B (6/7)
PB3 CL740 FB777 BC_B/W
PB6 CL741 FB778 BC_50
PB7 CL742 FB700 BKRON (3/7)
PC0 CL743 FB702 REVEN (4/7)
PC1 CL744 FB722 V_DET (2/7)

・Voltages are dc between ground and measurement point when color-bar signal is fed to PLAYER 1 and PLAYER 2. (Input impedance: DC 10MΩ)

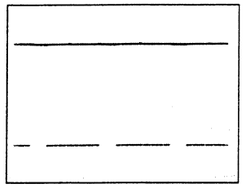
(51) IC730 (25) 1V/2ms



(52) IC730 (22) 1V/2ms



(69) CN701 (15) 1V/5ms

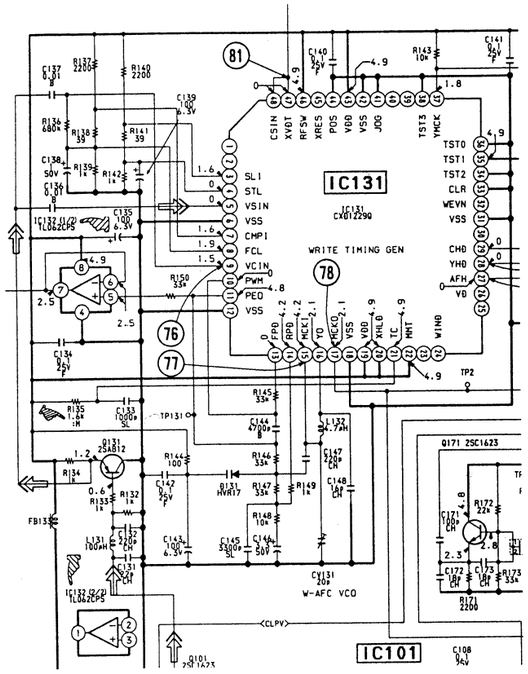


MM-27 (FRAME MEMORY) SCHEMATIC DIAGRAM

— Ref. No. : MM-27 Board; 5,000 Series —

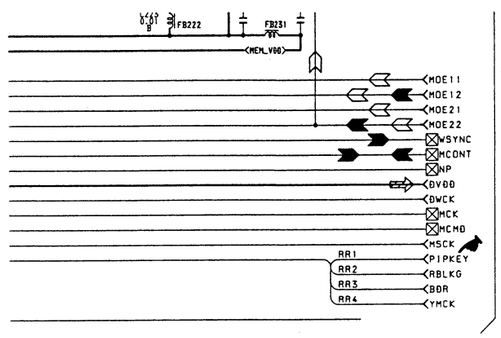
MM-27 (1/2)

Page 4-31 Location : C-2 to H-5



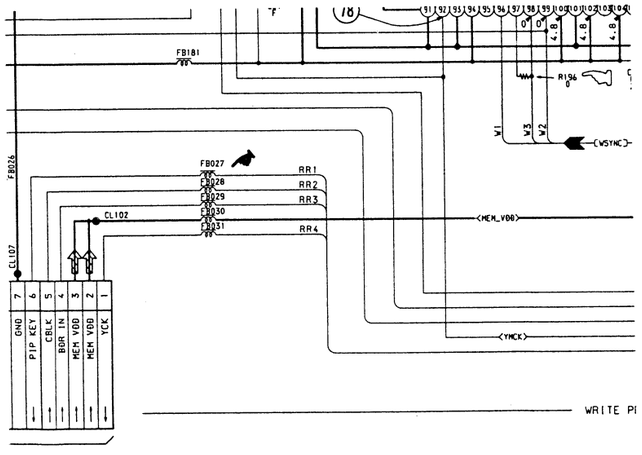
MM-27 (1/2)

Page 4-34 Location : M-22 to P-25



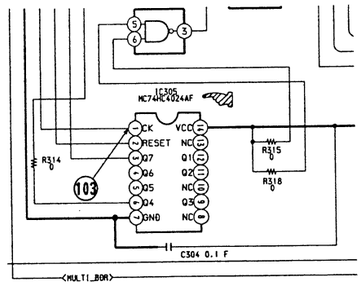
MM-27 (1/2)

Page 4-32 Location : M-2 to P-7



MM-27 (2/2)

Page 4-36 Location : G-11 to I-13



IC302 IC303 IC304 IC405

MM-27 BOARD DIFFERENT PARTS LIST

Model Name		FXE-100P		FXE-120P	
Board Name	Ref.No.	Part No.	Description	Part No.	Description
MM-27	FB027	1-412-390-11	INDUCTOR CHIP 0uH	—	—
	IC132	8-759-030-16	IC MC34182M	8-759-906-53	IC TL062CPS
	IC305	8-759-926-97	IC SN74HC4024NS	8-759-008-34	IC MC74HC4024F
	R135	1-218-853-11	METAL CHIP 1.8K 0.5% 1/16W	1-218-852-11	METAL CHIP 1.6K 0.5% 1/16W
	R158**	—	—	1-216-864-11	CONDUCTOR, CHIP
	R161**	—	—	1-216-864-11	CONDUCTOR, CHIP
	R196	—	—	1-216-864-11	CONDUCTOR, CHIP
	R300**	—	—	1-216-864-11	CONDUCTOR, CHIP

**: Drops out from the electrical parts list in the FXE-100P service manual.

: Points added parts.

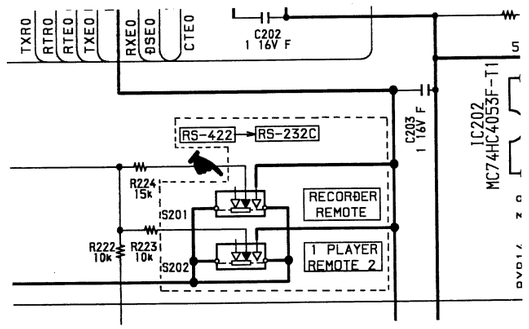
: Points deleted parts.

: Points changed parts.

RS-62 (RS-232C/422) SCHEMATIC DIAGRAM

— Ref. No. : RS-62 Board; 4,000 Series —

Page 4-54 Location : C-5 to E-7



RS-62 BOARD DIFFERENT PARTS LIST

Model Name		FXE-100P		FXE-120P	
Board Name	Ref.No.	Part No.	Description	Part No.	Description
RS-62		*A-7066-124-A	RS-62 BOARD, COMPLETE	*A-7066-918-A	RS-62 (P2) BOARD, COMPLETE
	S201, 202	1-572-442-11	SWITCH, SLIDE	—	—

MM-27 BOARD DIFFERENT PARTS LIST

Model Name		FXE-100P		FXE-120P	
Board Name	Ref.No.	Part No.	Description	Part No.	Description
MM-27	FB027	1-412-390-11	INDUCTOR CHIP 0uH	—	—
	IC132	8-759-030-16	IC MC34182M	8-759-906-53	IC TL062CPS
	IC305	8-759-926-97	IC SN74HC4024NS	8-759-008-34	IC MC74HC4024F
	R135	1-218-853-11	METAL CHIP 1.8K 0.5% 1/16W	1-218-852-11	METAL CHIP 1.6K 0.5% 1/16W
	R158**	—	—	1-216-864-11	CONDUCTOR, CHIP
	R161**	—	—	1-216-864-11	CONDUCTOR, CHIP
	R196	—	—	1-216-864-11	CONDUCTOR, CHIP
	R300**	—	—	1-216-864-11	CONDUCTOR, CHIP

**: Drops out from the electrical parts list in the FXE-100P service manual.

: Points added parts.

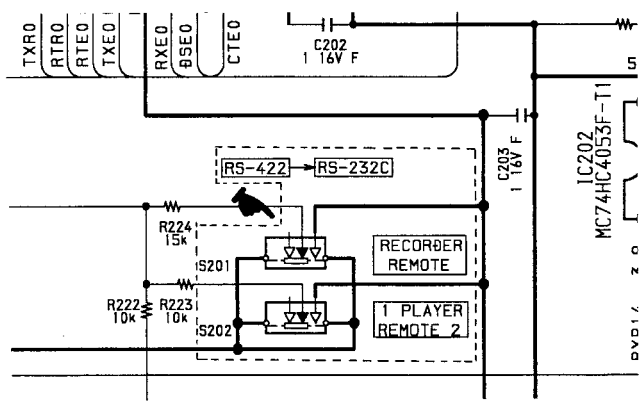
: Points deleted parts.

: Points changed parts.

RS-62 (RS-232C/422) SCHEMATIC DIAGRAM

— Ref. No. : RS-62 Board; 4,000 Series —

Page 4-54 Location : C-5 to E-7



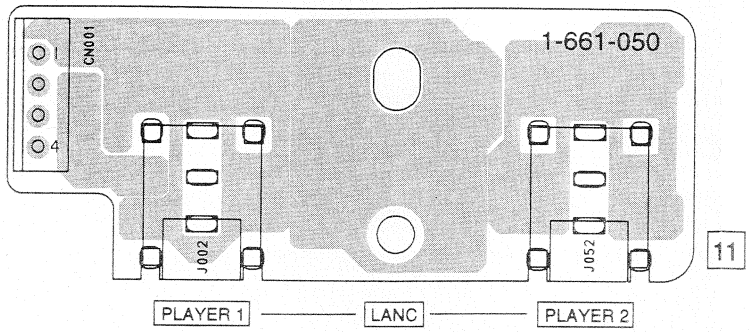
RS-62 BOARD DIFFERENT PARTS LIST

Model Name		FXE-100P		FXE-120P	
Board Name	Ref.No.	Part No.	Description	Part No.	Description
RS-62		*A-7066-124-A	RS-62 BOARD, COMPLETE	*A-7066-918-A	RS-62 (P2) BOARD, COMPLETE
	S201, 202	1-572-442-11	SWITCH, SLIDE	—	—

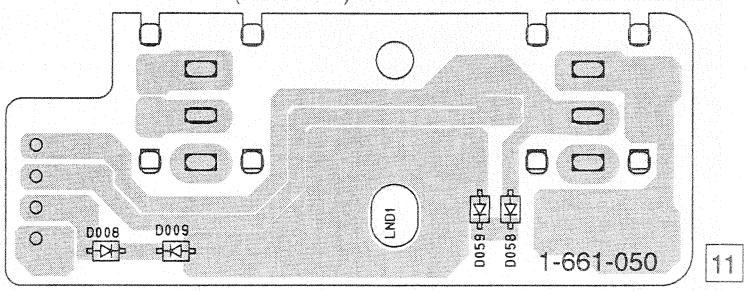
LC-51 (LANC JACK) PRINTED WIRING BOARD AND SCHEMATIC DIAGRAM

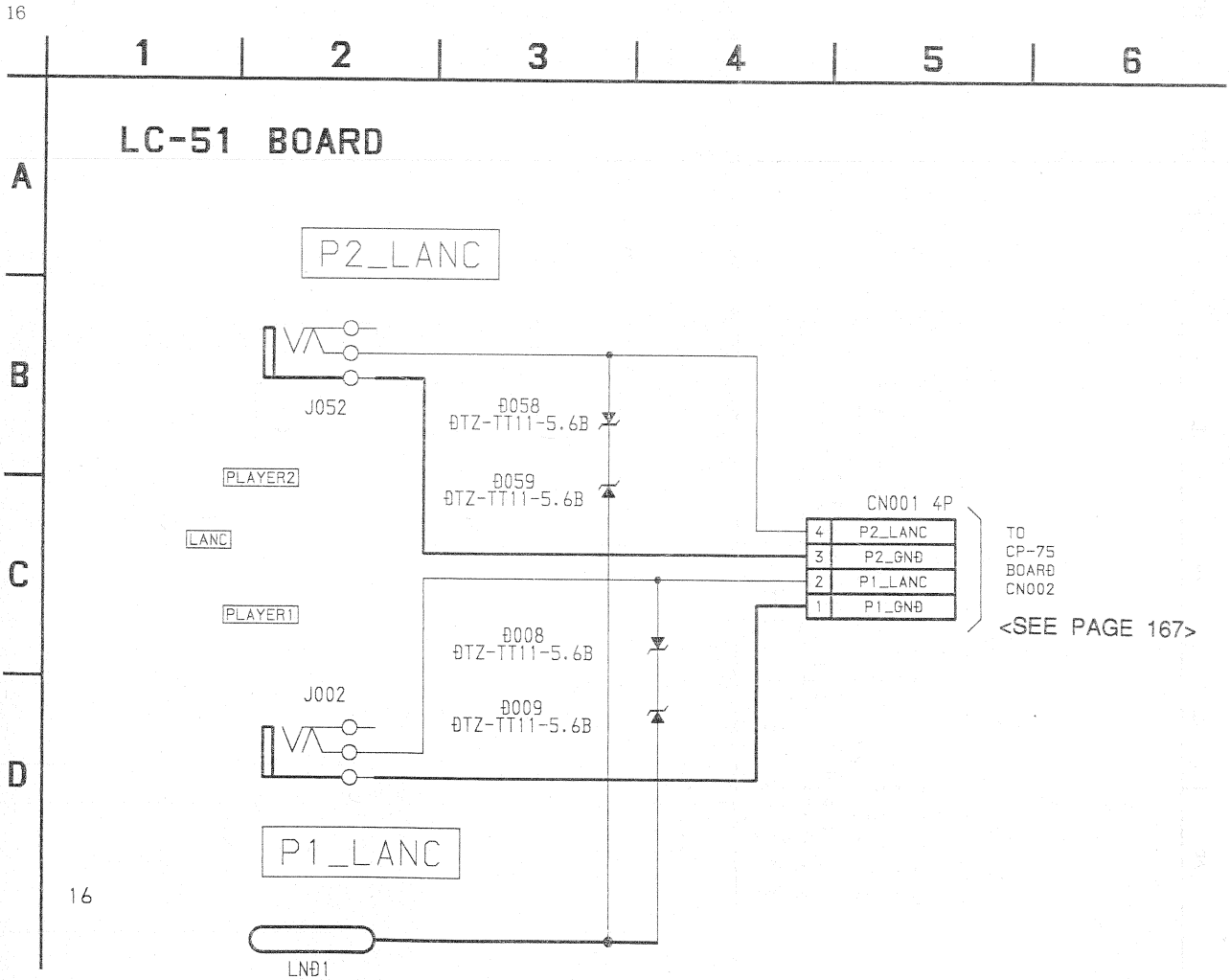
— Ref. No. : LC-51 Board; 9,000 Series —

LC-51 BOARD (SIDE A)



LC-51 BOARD (SIDE B)





Page 5-5

5-1. CPG, PTC, PIU, ICU (CP-75 board IC518:CXD1500Q)

Pin No.	Signal	I/O	Function
1	F/X	I	Internal oscillator clock and external clock input select pin
2	X1	I	Connect an external crystal oscillator (14.7456MHz)
3	X2	I	Connect an external crystal oscillator (14.7456MHz)
4	OSC	O	The same frequency as the crystal oscillator is output from this pin.
5	RESET	O	Power-ON reset signal output pin
6	$\overline{\text{RESIN}}$	I	Reset input.
7	GND		
8	$\overline{\text{RD}}$	I	Read-out control common input pin
9	$\overline{\text{WR}}$	I	Write-down control common input pin
10	A0	I	Common address input pin:A1
11	A1	I	Common address input pin:A2
12	$\overline{\text{CS 54}}$	I	PTC block select input pin
13	$\overline{\text{CS 55}}$	I	PIU block select input pin
14	$\overline{\text{CS59}}$	I	ICU block select input pin
15	D0	I/O	Data input and output pins between MPU and each internal functional blocks
16	D1	I/O	
17	D2	I/O	
18	D3	I/O	
19	D4	I/O	
20	D5	I/O	
21	D6	I/O	
22	D7	I/O	
23	$\overline{\text{INTAK}}$	I	
24	GND		
25	INTP0	I	"H" level interrupt
26	INTP1	I	"H" level interrupt
27	INTP2	I	"H" level interrupt
28	INTP3	I	"H" level interrupt
29	INTP4	I	Not used
30	INTP5	I	Not used
31	INTP6	I	Asynchronous type interrupt request input pin
32	INTP7	I	
33	VDD		
34	INT	O	Interrupt request output pin
35	$\overline{\text{SV}}$	I	
36	SA0	O	
37	SA1	O	
38	SA2	O	
39	CLK0	I	Clock input pin to the ϕ counter
40	GATE0	I	Input pin which controls the count inhibit and count initialize of the ϕ counter.
41	OUT0	O	614.4kHz which generates the clock rate of μ PD72001
42	CLK1	I	Same as the CLK0
43	GATE1	I	Same as the GATE0
44	OUT1	O	2MHz system clock output to TMP82C79M
45	GND		
46	CLK2	I	Same as the CLK0
47	GATE2	I	Same as the GATE0
48	OUT2	O	Same as the OUT0
49	DT0	I	DT0

Pin No.	Signal	I/O	Function
50	DT1	I	DT1
51	DT2	I	DT2
52	DT3	I	DT3
53	DT4	I	DT4
54	DT5	I	DT5
55	H. JOG	I	H. JOG
56	FWD/REW	I	FWD/REV
57	CUE IN	I	CUE IN
58	R E/O	I	EVEN/ODD (not used)
59	P12	I	Not used
60	P13	I	Not used
61	P14	I	Not used
62	P15	I	Not used
63	P16	I	Not used
64	NT/PAL	I	NTSC/PAL="L/H"
65	GND		
66	BUZZER ON	O	ON/OFF="H/L"
67	CONT	O	A/D converter type select
68	CUE OUT2	O	CUE OUT2
69	CUE OUT1	O	CUE OUT1
70	$\overline{\text{MASTER CS}}$	O	Chip select (active "L")
71	$\overline{\text{LED ON}}$	O	ON/OFF="L/H"
72	P26	O	LANC1 ON/OFF="H/L"
73	VDD		
74	P27	O	LANC2 ON/OFF="H/L"
75	CLK	O	4.9152MHz system clock output to μ PD72001
76	READY	O	Output signal which is generated by synchronizing the RDY input signal.
77	RDY	I	Ready signal input pin on the system bus
78	EXFS	I	Clock signal input pin when the external clock signal is used as the oscillator.
79	PRCLK	O	2.4576MHz fundamental clock output to PTC counter #0.
80	CKSYN	I	Input pin when multiple clock pulse generators are synchronized.

: Points added parts.

: Points deleted parts.

: Points changed parts.

5-2. LANC INTERFACE (CP-75 board IC001, 051: HD6473837H)

Pin No.	Signal	I/O	Function
1	PC3	I	4-bit input port
2	AVSS		
3	TEST	I	Test port
4	X2	O	Clock output
5	X1	I	Clock input
6	VSS		
7	OSC1	I	System clock input port
8	OSC2	O	System clock output port
9	$\overline{\text{RES}}$	I	Reset input port
10	MOD	I	Mode input port
11	$\overline{\text{LEARN}}$	I	Fixed to "H"
12	P21	O	8-bit output ports (Port 2)
13	P22	O	8-bit output ports (Port 2)
14	P23	O	8-bit output ports (Port 2)
15	$\overline{\text{WC OUT}}$	O	Write control output
16	P25	O	8-bit output port (Port 2)
17	$\overline{\text{CS OUT}}$	O	Chip select (Active: "L")
18	P27	O	8-bit output port (Port 2)
19	SCK1	O	SCK1 clock output
20	LANC IN	I	LANC data in
21	LANC OUT	O	LANC data out
22	SCK2	O	SCI2 clock output
23	SI2	I	Serial data input
24	SO2	O	Serial data output
25	STRB	O	Strobe output port
26	$\overline{\text{CS}}$	I	READY/$\overline{\text{BUSY}}$ status signal input
27	VSS		
28	V3	I	VCD power supply
29	V2	I	VCD power supply
30	V1	I	VCD power supply
31	VSS		
32	PA3	O	4-bit output port
33	$\overline{\text{BOX}}$/FXE	I	Fixed to "H"
34	PA1	O	4-bit output port
35	NTSC/$\overline{\text{PAL}}$	I	"H"= NTSC, "L"= PAL
36	P50	O	8-bit output ports (Port 5)
37	P51	O	8-bit output ports (Port 5)
38	P52	O	8-bit output ports (Port 5)
39	P53	O	8-bit output ports (Port 5)
40	P54	O	8-bit output ports (Port 5)
41	P55	O	8-bit output ports (Port 5)
42	P56	O	8-bit output ports (Port 5)
43	P57	O	8-bit output ports (Port 5)
44	P60	O	8-bit output ports (Port 6)
45	P61	O	8-bit output ports (Port 6)
46	P62	O	8-bit output ports (Port 6)
47	P63	O	8-bit output ports (Port 6)
48	P64	O	8-bit output ports (Port 6)
49	P65	O	8-bit output ports (Port 6)
50	P66	O	8-bit output ports (Port 6)

Pin No.	Signal	I/O	Function
51	P67	O	8-bit output ports (Port 6)
52	P70	O	8-bit output ports (Port 7)
53	P71	O	8-bit output ports (Port 7)
54	P72	O	8-bit output ports (Port 7)
55	P73	O	8-bit output ports (Port 7)
56	P74	O	8-bit output ports (Port 7)
57	P75	O	8-bit output ports (Port 7)
58	P76	O	8-bit output ports (Port 7)
59	P77	O	8-bit output ports (Port 7)
60	P80	O	8-bit output ports (Port 8)
61	P81	O	8-bit output ports (Port 8)
62	P82	O	8-bit output ports (Port 8)
63	P83	O	8-bit output ports (Port 8)
64	P84	O	8-bit output ports (Port 8)
65	P85	O	8-bit output ports (Port 8)
66	P86	O	8-bit output ports (Port 8)
67	P87	O	8-bit output ports (Port 8)
68	P90	O	8-bit output ports (Port 9)
69	P91	O	8-bit output ports (Port 9)
70	P92	O	8-bit output ports (Port 9)
71	P93	O	8-bit output ports (Port 9)
72	P94	O	8-bit output ports (Port 9)
73	P95	O	8-bit output ports (Port 9)
74	P96	O	8-bit output ports (Port 9)
75	P97	O	8-bit output ports (Port 9)
76	VCC		
77	P10	O	8-bit output ports (Port 1)
78	P11	O	8-bit output ports (Port 1)
79	P12	O	8-bit output ports (Port 1)
80	P13	O	8-bit output ports (Port 1)
81	P14	O	8-bit output ports (Port 1)
82	P15	O	8-bit output ports (Port 1)
83	P16	O	8-bit output ports (Port 1)
84	P17	O	8-bit output ports (Port 1)
85	SCK3	I	Serial clock input port
86	RXD	I	Serial data input port
87	TXD	O	Serial data output port
88	$\overline{\text{IRQ 0}}$	I	Not used
89	AVCC		
90	PB0	I	8-bit input ports (Port B)
91	PB1	I	8-bit input ports (Port B)
92	PB2	I	8-bit input ports (Port B)
93	PB3	I	8-bit input ports (Port B)
94	PB4	I	8-bit input ports (Port B)
95	PB5	I	8-bit input ports (Port B)
96	PB6	I	8-bit input ports (Port B)
97	PB7	I	8-bit input ports (Port B)
98	PC0	I	8-bit input ports (Port C)
99	PC1	I	8-bit input ports (Port C)
100	PC2	I	8-bit input ports (Port C)

5-3. AUDIO EFFECT CONTROL (DP-53 board IC802: CXP81124)

Pin No.	Signal	I/O	Function
1	PB5	O	Serial clock output
2	PB4	O	Strobe signal output
3	PB3	O	8-bit output ports (Port B)
4	PB2	O	8-bit output ports (Port B)
5	PB1	O	8-bit output ports (Port B)
6	PB0	O	8-bit output ports (Port B)
7	PC7	I	ON/OFF key input, B-bus (Active "L")
8	PC6	I	SELECT key input, B-bus (Active"L")
9	PC5	I	− key input, B-bus (Active "L")
10	PC4	I	+ key input, B-bus (Active "L")
11	PC3	I	ON/OFF key input, A-bus (Active "L")
12	PC2	I	SELECT key input, A-bus (Active "L")
13	PC1	I	− key input, A-bus (Active "L")
14	PC0	I	+ key input, A-bus (Active "L")
15	PD7	O	8-bit output ports (Port D)
16	PD6	O	8-bit output ports (Port D)
17	PD5	O	8-bit output ports (Port D)
18	PD4	O	8-bit output ports (Port D)
19	PD3	I	L/R switch input (R), B-bus (Active "L")
20	PD2	I	L/R switch input (L), B-bus (Active "L")
21	PD1	I	L/R switch input (R), A-bus (Active "L")
22	PD0	I	L/R switch input (L), A-bus (Active "L")
23	MP	I	Microprocessor mode port ("L")
24	XTAL	O	System clock output
25	EXTAL	I	System clock input
26	VSS		
27	$\overline{RST}$	I	
28	$\overline{CS0}$	I	Serial chip select input port
29	SI0	I	Serial data input port
30	SO0	O	Serial data output port
31	SCK0	O	Serial clock output port
32	AVSS		
33	AVRE		
34	AVDD		
35	PF7	O	4-bit output port (Port F)
36	PF6	O	4-bit output port (Port F)
37	PF5	O	4-bit output port (Port F)
38	PF4	O	4-bit output port (Port F)
39	PF3	I	4-bit input port (Port F)
40	PF2	I	4-bit input port (Port F)
41	PF1	I	4-bit input port (Port F)
42	PF0	I	4-bit input port (Port F)
43	PE3	O	2-bit output port (Port E)
44	PE2	O	2-bit output port (Port E)
45	PE1	I	2-bit input port (Port E)
46	PE0	I	2-bit input port (Port E)
47	PG7	O	1-bit output port (Port G)
48	PG6	O	1-bit output port (Port G)
49	PG5/SCK1	O	1-bit output port (Port G)
50	PG4	O	1-bit output port (Port G)

Pin No.	Signal	I/O	Function
51	PG3/TO	O	1-bit output port (Port G)
52	PA7	O	8-bit output port (Port A)
53	PA6	O	Chip select output, B-bus
54	PA5	O	Serial data output, B-bus
55	PA4	O	Serial clock output, B-bus
56	NC		
57	VDD		
58	VSS		
59	PA3	O	8-bit output port (Port A)
60	PA2	O	Chip select output, A-bus
61	PA1	O	Serial data output, A-bus
62	PA0	O	Serial clock output, A-bus
63	PB7	O	Reset signal output
64	PB6	O	Serial data output

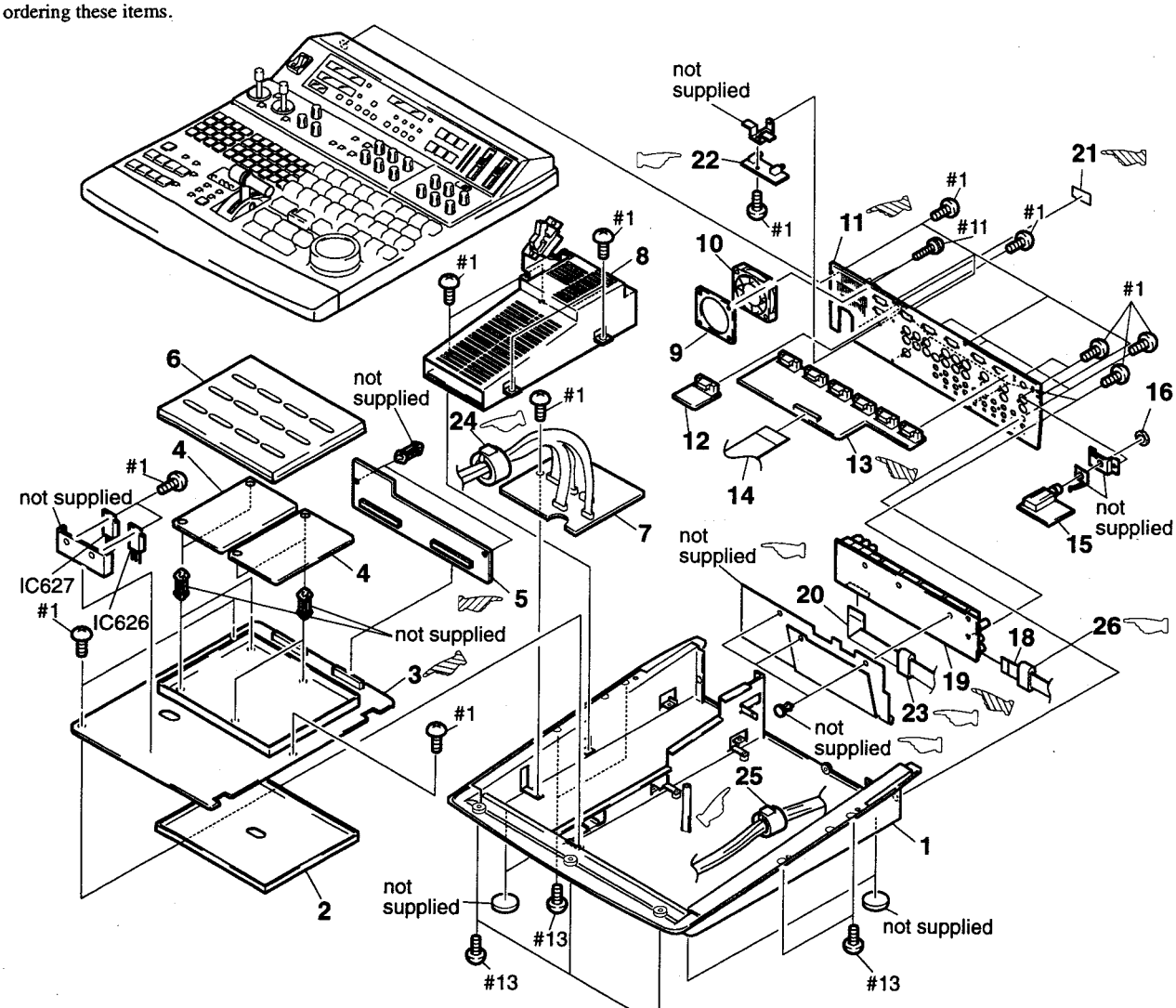
SECTION 6
EXPLODED VIEWS

6-1. MAIN SECTION

NOTE:

- -XX, -X mean standardized parts, so they may have some differences from the original one.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware (#mark) list is given in the last of this parts list.

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.



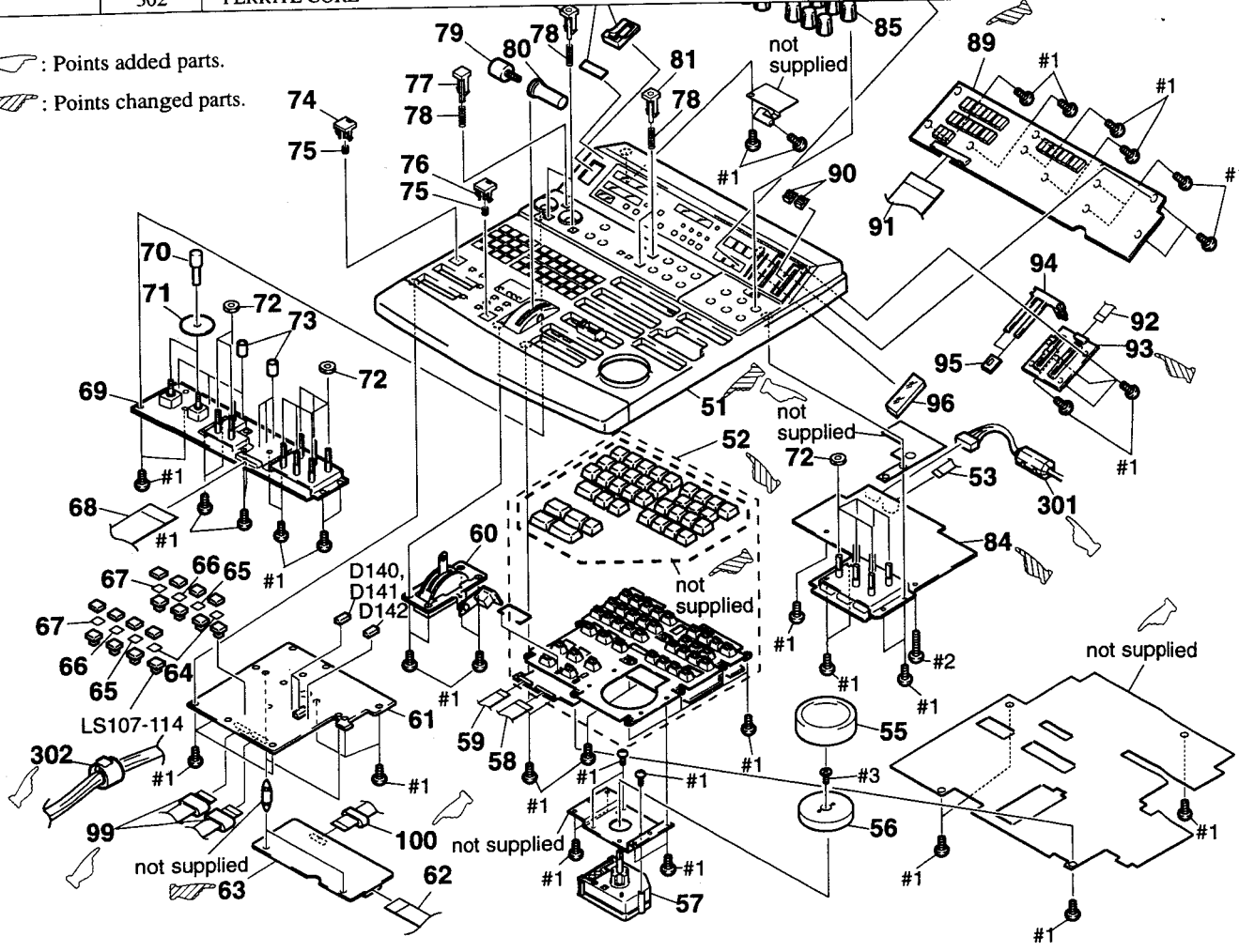
Ref. No.	Part No.	Description	Remarks
* 1	X-3943-515-1	COVER ASSY, BOTTOM	
* 2	3-957-076-02	CASE (DV-19)(LOWER), SHIELD	
* 3	A-7066-877-A	DV-19 (P2) BOARD, COMPLETE	
* 4	A-7066-127-A	MM-27 (P) BOARD, COMPLETE	
* 5	A-7066-878-A	VI-144 (P) BOARD, COMPLETE	
* 6	3-957-074-01	CASE (DV-19)(UPPER), SHIELD	
* 7	A-7066-120-A	FU-123 BOARD, COMPLETE	
⚠8	1-413-954-13	POWER BLOCK	
* 9	3-697-996-01	BRACKET, FAN	
10	1-541-684-31	MOTOR, DC	
* 11	3-956-990-71	PANEL, REAR	
* 12	A-7066-122-A	ED-41 BOARD, COMPLETE	
* 13	A-7066-918-A	RS-62 (P2) BOARD, COMPLETE	
14	1-751-565-11	CABLE, FLAT (FRS-14)	
* 15	A-7066-123-A	MJ-65 BOARD, COMPLETE	
16	3-684-465-01	NUT, HEXAGON	
18	1-751-560-11	CABLE, FLAT (FAI-1)	
* 19	A-7066-808-A	RE-31 BOARD, COMPLETE	
20	1-751-561-11	CABLE, FLAT (FAO-1)	
* 21	3-973-635-01	LABEL, MODEL NUMBER (CEE)	
* 22	A-7066-809-A	LC-51 BOARD, COMPLETE	
23	1-543-936-11	CORE (FPC)	
24	1-543-982-11	FERRITE CORE	
25	1-543-993-11	FERRITE CORE	
* 26	1-500-169-11	CORE (FPC)	
IC626	8-759-245-79	IC TA79005S	
IC627	8-759-144-82	IC uPC2405HF	

6-2. DIFFERENT PARTS LIST

Page	Ref. No.	Description	FXE-100P Part No.	FXE-120P Part No.
2. KEYBOARD SECTION				
6-2	51	COVER ASSY, TOP	X-3944-189-2	X-3946-741-1
	52	KY-22 BOARD	*1-467-473-11	—
	52	KEYBOARD BLOCK ASSY (KY-22 BOARD)	—	A-7092-860-A
	63	CP-64 (P) BOARD, COMPLETE	*A-7066-119-A	—
	63	CP-75 (P) BOARD, COMPLETE	—	*A-7066-876-A
	84	AM-32 BOARD, COMPLETE	*A-7063-835-A	—
	84	AM-36 BOARD, COMPLETE	*A-7066-652-A	—
	84	AM-37 (P) BOARD, COMPLETE	—	*A-7066-933-A
	89	DP-46 BOARD, COMPLETE	*A-7053-834-A	—
	89	DP-53 BOARD, COMPLETE	—	*A-7066-805-A
	93	AS-46 BOARD, COMPLETE	*A-7053-833-A	—
	93	AS-46P BOARD, COMPLETE	*A-7066-664-A	—
	93	AS-46 BOARD	—	*1-649-622-11
	98	SET, KEY TOP	3-957-769-02	Not supplied
	99	CORE (FPC)	—	1-500-169-11
	100	FERRITE BEAD	—	1-500-112-11
	301	FERRITE BEAD (WITH CASE)	—	1-500-051-11
	302	FERRITE CORE	—	1-543-993-11

: Points added parts.

: Points changed parts.



Page	Ref. No.	Description	FXE-100P Part No.	FXE-120P Part No.
5. BUTTON SECTION				
	201	BUTTON (B-1)	3-957-023-01	—
	201	BUTTON (B-A1)	—	3-968-214-01
	202	BUTTON (B-2)	3-957-024-01	—
	202	BUTTON (B-A2)	—	3-968-215-01
	203	BUTTON (B-3)	3-957-025-01	—
	203	BUTTON (B-A3)	—	3-968-216-01
	204	BUTTON (B-4)	3-957-026-01	—
	204	BUTTON (B-A4)	—	3-968-217-01
	205	BUTTON (B-5)	3-957-027-01	—
	205	BUTTON (B-A5)	—	3-968-218-01
	206	BUTTON (B-6)	3-957-028-01	—
	206	BUTTON (B-A6)	—	3-968-219-01
	207	BUTTON (B-7)	3-957-029-01	—
	207	BUTTON (B-A7)	—	3-968-220-01
	208	BUTTON (B-8)	3-957-030-01	—
	208	BUTTON (B-A8)	—	3-968-221-01
	209	BUTTON (B-9)	3-957-031-01	—
	209	BUTTON (B-A9)	—	3-968-222-01
	210	BUTTON (B-10)	3-957-032-01	—
	210	BUTTON (B-A10)	—	3-968-223-01
	211	BUTTON (B-11)	3-957-033-01	—
	211	BUTTON (B-A11)	—	3-968-224-01
	212	BUTTON (B-12)	3-957-034-01	—
	212	BUTTON (B-A12)	—	3-968-225-01
	215	BUTTON (B-15)	3-957-049-01	—
	215	BUTTON (B-A13)	—	3-968-226-01
6-5	216	BUTTON (B-16)	3-957-050-01	—
	216	BUTTON (B-A14)	—	3-968-227-01
	218	BUTTON (B-18)	3-957-052-01	—
	218	BUTTON (B-A15)	—	3-968-228-01
	219	BUTTON (B-19)	3-957-053-01	—
	219	BUTTON (B-A16)	—	3-968-229-01
	222	BUTTON (B-22)	3-957-056-01	—
	222	BUTTON (B-A17)	—	3-968-230-01
	223	BUTTON (B-23)	3-957-057-01	—
	223	BUTTON (B-A18)	—	3-968-231-01
	226	BUTTON (B-26)	3-957-060-01	—
	226	BUTTON (B-A19)	—	3-968-232-01
	227	BUTTON (B-27)	3-957-063-01	—
	227	BUTTON (B-A20)	—	3-968-233-01
	230	BUTTON (B-30)	3-957-066-01	—
	230	BUTTON (B-A21)	—	3-968-234-01
	231	BUTTON (B-31)	3-957-067-01	—
	231	BUTTON (B-A22)	—	3-968-235-01
	232	BUTTON (B-32)	3-957-068-01	—
	232	BUTTON (B-A23)	—	3-968-236-01
	233	BUTTON (B-33)	3-957-069-01	—
	233	BUTTON (B-A24)	—	3-968-237-01
	234	BUTTON (B-34)	3-957-070-01	—
	234	BUTTON (B-A25)	—	3-968-238-01
	235	BUTTON (B-35)	3-957-071-01	—
	235	BUTTON (B-A26)	—	3-968-239-01
	236	BUTTON (B-36)	3-957-072-01	—
	236	BUTTON (B-A27)	—	3-968-240-01
MISCELLANEOUS				
7-53	52	KY-22 BOARD	1-467-473-11	—
	52	KEYBOARD BLOCK ASSY (KY-22 BOARD)	—	A-7092-860-A
ACCESSORIES AND PACKING MATERIALS				
		CORD, CONNECTION (FOR LANC) 2m	—	1-574-316-11
		MANUAL, INSTRUCTION (ENGLISH)	3-757-628-11	3-810-467-11
		MANUAL, INSTRUCTION (FRENCH)	3-757-628-31	3-810-467-21
7-53		MANUAL, INSTRUCTION (GERMAN)	3-757-628-41	3-810-467-31
		MANUAL, INSTRUCTION (PRIMER) (ENGLISH)	3-757-632-11	3-856-150-11
		MANUAL, INSTRUCTION (PRIMER) (FRENCH)	3-757-632-31	3-856-150-21
		MANUAL, INSTRUCTION (PRIMER) (GERMAN)	3-757-632-41	3-856-150-31
		INDIVIDUAL CARTON	3-957-094-01	3-957-094-31

SECTION 7
ELECTRICAL PARTS LIST

7-1. DIFFERENT PARTS

Model Name		FXE-100P		FXE-120P	
Board Name	Ref. No.	Part No.	Description	Part No.	Description
AS-46		*A-7053-833-A	AS-46 BOARD, COMPLETE	*1-649-622-11	AS-46 BOARD
		*A-7066-664-A	AS-46P BOARD, COMPLETE		
DV-19		*A-7066-121-A	DV-19 (P) BOARD, COMPLETE	*A-7066-877-A	DV-19 (P2) BOARD, COMPLETE
	C019	1-164-360-11	CERAMIC CHIP 0.1uF 16V	—	—
	C020	1-164-360-11	CERAMIC CHIP 0.1uF 16V	—	—
	C021	1-164-360-11	CERAMIC CHIP 0.1uF 16V	—	—
	C022	1-164-360-11	CERAMIC CHIP 0.1uF 16V	—	—
	C040	1-164-360-11	CERAMIC CHIP 0.1uF 16V	—	—
	C041	1-164-360-11	CERAMIC CHIP 0.1uF 16V	—	—
	C042	1-164-360-11	CERAMIC CHIP 0.1uF 16V	—	—
	C043	1-164-360-11	CERAMIC CHIP 0.1uF 16V	—	—
	C044	1-164-360-11	CERAMIC CHIP 0.1uF 16V	—	—
	C045	1-164-360-11	CERAMIC CHIP 0.1uF 16V	—	—
	C046	1-164-360-11	CERAMIC CHIP 0.1uF 16V	—	—
	C047	1-164-360-11	CERAMIC CHIP 0.1uF 16V	—	—
	C048	1-164-360-11	CERAMIC CHIP 0.1uF 16V	—	—
	C049	1-164-360-11	CERAMIC CHIP 0.1uF 16V	—	—
	C050	1-164-360-11	CERAMIC CHIP 0.1uF 16V	—	—
	C051	1-164-360-11	CERAMIC CHIP 0.1uF 16V	—	—
	C052	1-164-360-11	CERAMIC CHIP 0.1uF 16V	—	—
	C053	1-164-360-11	CERAMIC CHIP 0.1uF 16V	—	—
	C054	1-164-360-11	CERAMIC CHIP 0.1uF 16V	—	—
	C055	1-164-360-11	CERAMIC CHIP 0.1uF 16V	—	—
	C108	1-164-360-11	CERAMIC CHIP 0.1uF 16V	—	—
	C109	1-164-360-11	CERAMIC CHIP 0.1uF 16V	—	—
	C110	1-164-360-11	CERAMIC CHIP 0.1uF 16V	—	—
	C111	1-164-360-11	CERAMIC CHIP 0.1uF 16V	—	—
	C112	1-164-360-11	CERAMIC CHIP 0.1uF 16V	—	—
	C141	1-164-360-11	CERAMIC CHIP 0.1uF 16V	—	—
	C142	1-164-360-11	CERAMIC CHIP 0.1uF 16V	—	—
	C143	1-164-360-11	CERAMIC CHIP 0.1uF 16V	—	—
	C154	1-162-915-11	CERAMIC CHIP 10PF 0.5PF 50V	1-164-156-11	CERAMIC CHIP 0.1uF 25V
	C157	1-164-360-11	CERAMIC CHIP 0.1uF 16V	—	—
	C158	1-164-360-11	CERAMIC CHIP 0.1uF 16V	—	—
	C159	1-164-360-11	CERAMIC CHIP 0.1uF 16V	—	—
	C160	1-164-360-11	CERAMIC CHIP 0.1uF 16V	—	—
	C211	1-164-360-11	CERAMIC CHIP 0.1uF 16V	—	—
	C212	1-164-360-11	CERAMIC CHIP 0.1uF 16V	—	—
	C213	1-164-360-11	CERAMIC CHIP 0.1uF 16V	—	—
	C214	1-164-360-11	CERAMIC CHIP 0.1uF 16V	—	—
	C255	1-162-974-11	CERAMIC CHIP 0.01uF 50V	—	—
	C270	1-164-238-11	CERAMIC CHIP 36PF 5% 50V	1-162-921-11	CERAMIC CHIP 33PF 5% 50V
	C466	1-162-923-11	CERAMIC CHIP 47PF 5% 50V	—	—
	C511	1-164-360-11	CERAMIC CHIP 0.1uF 16V	—	—
	C512	1-164-360-11	CERAMIC CHIP 0.1uF 16V	—	—
	C513	1-164-360-11	CERAMIC CHIP 0.1uF 16V	—	—
	C514	1-164-360-11	CERAMIC CHIP 0.1uF 16V	—	—
	C515	1-164-360-11	CERAMIC CHIP 0.1uF 16V	—	—
	C516	1-164-360-11	CERAMIC CHIP 0.1uF 16V	—	—
	C526	1-164-360-11	CERAMIC CHIP 0.1uF 16V	—	—
	C527	1-164-360-11	CERAMIC CHIP 0.1uF 16V	—	—
	C528	1-164-360-11	CERAMIC CHIP 0.1uF 16V	—	—
	C529	1-164-360-11	CERAMIC CHIP 0.1uF 16V	—	—
	C530	1-164-360-11	CERAMIC CHIP 0.1uF 16V	—	—
	C539	1-164-360-11	CERAMIC CHIP 0.1uF 16V	—	—
	C540	1-164-360-11	CERAMIC CHIP 0.1uF 16V	—	—
	C541	1-164-360-11	CERAMIC CHIP 0.1uF 16V	—	—
	C542	1-164-360-11	CERAMIC CHIP 0.1uF 16V	—	—
	C543	1-164-360-11	CERAMIC CHIP 0.1uF 16V	—	—
	C559	1-164-360-11	CERAMIC CHIP 0.1uF 16V	—	—

Model Name		FXE-100P		FXE-120P	
Board Name	Ref.No.	Part No.	Description	Part No.	Description
	C560	1-164-360-11	CERAMIC CHIP 0.1uF 16V	—	—
	C561	1-164-360-11	CERAMIC CHIP 0.1uF 16V	—	—
	C562	1-164-360-11	CERAMIC CHIP 0.1uF 16V	—	—
	C564	1-164-360-11	CERAMIC CHIP 0.1uF 16V	—	—
	C565	1-164-360-11	CERAMIC CHIP 0.1uF 16V	—	—
	C566	1-164-360-11	CERAMIC CHIP 0.1uF 16V	—	—
	C567	1-164-360-11	CERAMIC CHIP 0.1uF 16V	—	—
	C578	1-162-926-11	CERAMIC CHIP 82PF 5% 50V	1-162-923-11	CERAMIC CHIP 47PF 5% 50V
	C583	1-164-360-11	CERAMIC CHIP 0.1uF 16V	—	—
	C584	1-164-360-11	CERAMIC CHIP 0.1uF 16V	—	—
	C585	1-164-360-11	CERAMIC CHIP 0.1uF 16V	—	—
	C588	1-164-360-11	CERAMIC CHIP 0.1uF 16V	—	—
	C589	1-164-360-11	CERAMIC CHIP 0.1uF 16V	—	—
	C590	1-164-360-11	CERAMIC CHIP 0.1uF 16V	—	—
	C591	1-164-360-11	CERAMIC CHIP 0.1uF 16V	—	—
	C620	1-164-360-11	CERAMIC CHIP 0.1uF 16V	—	—
	C621	1-164-360-11	CERAMIC CHIP 0.1uF 16V	—	—
	C622	1-164-360-11	CERAMIC CHIP 0.1uF 16V	—	—
	C633	1-164-360-11	CERAMIC CHIP 0.1uF 16V	—	—
	C634	1-164-360-11	CERAMIC CHIP 0.1uF 16V	—	—
	C635	1-164-360-11	CERAMIC CHIP 0.1uF 16V	—	—
	C636	1-164-360-11	CERAMIC CHIP 0.1uF 16V	—	—
	C637	1-164-360-11	CERAMIC CHIP 0.1uF 16V	—	—
	C638	1-164-360-11	CERAMIC CHIP 0.1uF 16V	—	—
	C639	1-164-360-11	CERAMIC CHIP 0.1uF 16V	—	—
	C640	1-164-360-11	CERAMIC CHIP 0.1uF 16V	—	—
	C641	1-164-360-11	CERAMIC CHIP 0.1uF 16V	—	—
	C642	1-164-360-11	CERAMIC CHIP 0.1uF 16V	—	—
	C649	1-164-360-11	CERAMIC CHIP 0.1uF 16V	—	—
	C650	1-164-360-11	CERAMIC CHIP 0.1uF 16V	—	—
	C651	1-164-360-11	CERAMIC CHIP 0.1uF 16V	—	—
	C652	1-164-360-11	CERAMIC CHIP 0.1uF 16V	—	—
	C657	1-164-360-11	CERAMIC CHIP 0.1uF 16V	—	—
	C658	1-164-360-11	CERAMIC CHIP 0.1uF 16V	—	—
	C659	1-164-360-11	CERAMIC CHIP 0.1uF 16V	—	—
	C662	1-164-360-11	CERAMIC CHIP 0.1uF 16V	—	—
	C663	1-164-360-11	CERAMIC CHIP 0.1uF 16V	—	—
	C664	1-164-360-11	CERAMIC CHIP 0.1uF 16V	—	—
	C665	1-164-360-11	CERAMIC CHIP 0.1uF 16V	—	—
	C666	1-164-360-11	CERAMIC CHIP 0.1uF 16V	—	—
	C671	1-164-360-11	CERAMIC CHIP 0.1uF 16V	—	—
	C672	1-164-360-11	CERAMIC CHIP 0.1uF 16V	—	—
	C673	1-164-360-11	CERAMIC CHIP 0.1uF 16V	—	—
	C676	1-164-360-11	CERAMIC CHIP 0.1uF 16V	—	—
	C678	1-164-360-11	CERAMIC CHIP 0.1uF 16V	—	—
	C690	1-164-360-11	CERAMIC CHIP 0.1uF 16V	—	—
	C691	1-164-360-11	CERAMIC CHIP 0.1uF 16V	—	—
	C692	1-164-360-11	CERAMIC CHIP 0.1uF 16V	—	—
	C693	1-164-360-11	CERAMIC CHIP 0.1uF 16V	—	—
	C725	1-164-360-11	CERAMIC CHIP 0.1uF 16V	—	—
	C726	1-164-360-11	CERAMIC CHIP 0.1uF 16V	—	—
	C727	1-164-360-11	CERAMIC CHIP 0.1uF 16V	—	—
	C808	1-164-360-11	CERAMIC CHIP 0.1uF 16V	—	—
	C809	1-164-360-11	CERAMIC CHIP 0.1uF 16V	—	—
	C810	1-164-360-11	CERAMIC CHIP 0.1uF 16V	—	—
	C811	1-164-360-11	CERAMIC CHIP 0.1uF 16V	—	—
	C814	1-164-360-11	CERAMIC CHIP 0.1uF 16V	—	—
	C815	1-164-360-11	CERAMIC CHIP 0.1uF 16V	—	—
	C816	1-164-360-11	CERAMIC CHIP 0.1uF 16V	—	—

Model Name		FXE-100P		FXE-120P	
Board Name	Ref.No.	Part No.	Description	Part No.	Description
	C841	1-164-360-11	CERAMIC CHIP 0.1uF 16V	—	—
	C842	1-164-360-11	CERAMIC CHIP 0.1uF 16V	—	—
	C843	1-164-360-11	CERAMIC CHIP 0.1uF 16V	—	—
	C844	1-164-360-11	CERAMIC CHIP 0.1uF 16V	—	—
	C865	1-164-360-11	CERAMIC CHIP 0.1uF 16V	—	—
	C866	1-164-360-11	CERAMIC CHIP 0.1uF 16V	—	—
	C867	1-164-360-11	CERAMIC CHIP 0.1uF 16V	—	—
	C870	1-164-360-11	CERAMIC CHIP 0.1uF 16V	—	—
	C871	1-164-360-11	CERAMIC CHIP 0.1uF 16V	—	—
	C872	1-164-360-11	CERAMIC CHIP 0.1uF 16V	—	—
	C873	1-164-360-11	CERAMIC CHIP 0.1uF 16V	—	—
	C890	1-164-360-11	CERAMIC CHIP 0.1uF 16V	—	—
	C891	1-164-360-11	CERAMIC CHIP 0.1uF 16V	—	—
	C892	1-164-360-11	CERAMIC CHIP 0.1uF 16V	—	—
	C893	1-164-360-11	CERAMIC CHIP 0.1uF 16V	—	—
	C894	1-164-360-11	CERAMIC CHIP 0.1uF 16V	—	—
	C895	1-164-360-11	CERAMIC CHIP 0.1uF 16V	—	—
	C896	1-164-360-11	CERAMIC CHIP 0.1uF 16V	—	—
	C897	1-164-360-11	CERAMIC CHIP 0.1uF 16V	—	—
	C898	1-164-360-11	CERAMIC CHIP 0.1uF 16V	—	—
	C899	1-164-360-11	CERAMIC CHIP 0.1uF 16V	—	—
	C960	1-164-360-11	CERAMIC CHIP 0.1uF 16V	—	—
	C961	1-164-360-11	CERAMIC CHIP 0.1uF 16V	—	—
	C962	1-164-360-11	CERAMIC CHIP 0.1uF 16V	—	—
	C963	1-164-360-11	CERAMIC CHIP 0.1uF 16V	—	—
	C964	1-164-360-11	CERAMIC CHIP 0.1uF 16V	—	—
	C965	1-164-360-11	CERAMIC CHIP 0.1uF 16V	—	—
	C966	1-164-360-11	CERAMIC CHIP 0.1uF 16V	—	—
	C967	1-164-360-11	CERAMIC CHIP 0.1uF 16V	—	—
	C968	1-164-360-11	CERAMIC CHIP 0.1uF 16V	—	—
	C969	1-164-360-11	CERAMIC CHIP 0.1uF 16V	—	—
	C970	1-164-360-11	CERAMIC CHIP 0.1uF 16V	—	—
	C971	1-164-360-11	CERAMIC CHIP 0.1uF 16V	—	—
	C972	1-164-360-11	CERAMIC CHIP 0.1uF 16V	—	—
	D101	8-719-800-76	DIODE 1SS226	8-719-801-78	DIODE 1SS184
	D104	8-719-800-76	DIODE 1SS226	8-719-104-34	DIODE 1S2836
	D301	8-719-800-76	DIODE 1SS226	8-719-104-34	DIODE 1S2836
	D302	8-719-800-76	DIODE 1SS226	8-719-104-34	DIODE 1S2836
	D303	8-719-800-76	DIODE 1SS226	8-719-104-34	DIODE 1S2836
	D304	8-719-800-76	DIODE 1SS226	8-719-104-34	DIODE 1S2836
	D305	8-719-800-76	DIODE 1SS226	8-719-801-78	DIODE 1SS184
	D602	8-719-800-76	DIODE 1SS226	8-719-104-34	DIODE 1S2836
	FB536, 537	1-543-775-11	FILTER, EMI	—	—
	FL101	1-415-551-11	DELAY LINE 140NS	—	—
	FL950	1-236-381-11	LPF	1-233-246-11	FILTER, LOW PASS
	FL951	1-236-381-11	LPF	1-233-246-11	FILTER, LOW PASS
	IC108	8-759-150-06	IC uPC324G2-E2	8-759-100-95	IC uPC324G2
	IC505	8-759-030-16	IC MC34182M	8-759-906-53	IC TL062CPS
	IC514	8-759-030-16	IC MC34182M	8-759-906-53	IC TL062CPS
	IC519	8-759-030-16	IC MC34182M	8-759-906-53	IC TL062CPS
	IC529	8-759-277-76	IC uPD78P324GJ-5BJ-991	8-759-277-77	IC uPD78324GJ-507-5BJ
	IC541	8-759-180-86	IC TC7W74F-TE12L	8-759-180-84	IC TC7W74F
	IC542	8-759-926-97	IC SN74HC4024NS	8-759-008-34	IC MC74HC4024F
	IC543	8-759-058-54	IC TC7S00FU	8-759-231-22	IC TA7417AP
	IC730	8-759-277-75	IC M37702E4A-GDX991-FP	8-759-386-69	IC M37702M6B187FP
	L209	1-410-386-11	INDUCTOR CHIP 27uH	—	—
	R188	1-218-706-11	METAL CHIP 3.9K 5% 1/16W	1-216-828-11	METAL CHIP 3.9K 5% 1/16W
	R251	1-216-823-11	METAL CHIP 1.5K 5% 1/16W	—	—
	R816	1-218-845-11	METAL GLAZE 820 0.5% 1/16W	—	—

Model Name		FXE-100P		FXE-120P	
Board Name	Ref.No.	Part No.	Description	Part No.	Description
	R824	1-216-716-11	METAL GLAZE 10K 0.5% 1/16W	—	—
	R950	1-218-717-11	METAL CHIP 11K 0.50% 1/16W	1-218-716-11	METAL CHIP 10K 0.50% 1/16W
	R956	1-216-833-11	METAL CHIP 10K 5% 1/16W	—	—
	R964	1-216-833-11	METAL CHIP 10K 5% 1/16W	—	—
KY-22		*1-467-473-11	KY-22 BOARD	A-7092-860-A	KEYBOARD BLOCK ASSY (KY-22 BOARD)
MM-27	FB027	1-412-390-11	INDUCTOR CHIP 0uH	—	—
	IC132	8-759-030-16	IC MC34182M	8-759-906-53	IC TL062CPS
	IC305	8-759-926-97	IC SN74HC4024NS	8-759-008-34	IC MC74HC4024F
	R135	1-218-853-11	METAL CHIP 1.8K 0.5% 1/16W	1-218-852-11	METAL CHIP 1.6K 0.5% 1/16W
	R158**	—	—	1-216-864-11	CONDUCTOR, CHIP
	R161**	—	—	1-216-864-11	CONDUCTOR, CHIP
	R196	—	—	1-216-864-11	CONDUCTOR, CHIP
	R300**	—	—	1-216-864-11	CONDUCTOR, CHIP
RE-25/31		*A-7053-847-A	RE-25 BOARD, COMPLETE	*A-7066-808-A	RE-31 BOARD, COMPLETE
RS-62		*A-7066-124-A	RS-62 BOARD, COMPLETE	*A-7066-918-A	RS-62 (P2) BOARD, COMPLETE
	S201, 202	1-572-442-11	SWITCH, SLIDE	—	—
VI-126/144		*A-7066-126-A	VI-126 (P) BOARD, COMPLETE	*A-7066-878-A	VI-144 (P) BOARD, COMPLETE

**: Drops out from the electrical parts list in the FXE-100P service manual.

7-2. ELECTRICAL PARTS LIST

NOTE:

When indicating parts by reference number, please include the board name.

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX, -X mean standardized parts, so they may have some difference from the original one.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- CAPACITORS:
  uF: μF
- RESISTORS
  All resistors are in ohms.
  METAL: metal-film resistor
  METAL OXIDE: Metal Oxide-film resistor
  F: nonflammable
- COILS
  uH: μH
- SEMICONDUCTORS
  In each case, u: μ, for example:
  uA...: μA... , uPA... , μPA... ,
  uPB... , μPB... , uPC... , μPC... ,
  uPD..., μPD...

Ref. No.	Part No.	Description			Remarks
*	A-7066-933-A	AM-37(P) BOARD, COMPLETE (Ref. No. 1,000 Series)			
		**********			
	2-118-268-01	NUT (M9), HEXAGON			
		< CAPACITOR >			
C201	1-162-971-11	CERAMIC CHIP	0.001uF	10%	50V
C202	1-162-971-11	CERAMIC CHIP	0.001uF	10%	50V
C203	1-126-204-11	ELECT CHIP	47uF	20%	16V
C204	1-162-971-11	CERAMIC CHIP	0.001uF	10%	50V
C205	1-126-204-11	ELECT CHIP	47uF	20%	16V
C206	1-104-823-11	TANTAL. CHIP	47uF	20%	16V
C210	1-126-204-11	ELECT CHIP	47uF	20%	16V
C211	1-104-823-11	TANTAL. CHIP	47uF	20%	16V
C213	1-104-823-11	TANTAL. CHIP	47uF	20%	16V
C214	1-164-361-11	CERAMIC CHIP	0.047uF		16V
C215	1-104-823-11	TANTAL. CHIP	47uF	20%	16V
C216	1-164-361-11	CERAMIC CHIP	0.047uF		16V
C217	1-110-569-11	TANTAL. CHIP	47uF	20%	6.3V
C218	1-110-569-11	TANTAL. CHIP	47uF	20%	6.3V
C219	1-164-361-11	CERAMIC CHIP	0.047uF		16V
C220	1-110-569-11	TANTAL. CHIP	47uF	20%	6.3V
C221	1-104-823-11	TANTAL. CHIP	47uF	20%	16V
C223	1-104-823-11	TANTAL. CHIP	47uF	20%	16V
C225	1-104-823-11	TANTAL. CHIP	47uF	20%	16V
C226	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C227	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C228	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C229	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C231	1-104-823-11	TANTAL. CHIP	47uF	20%	16V
C232	1-124-120-11	ELECT	220uF	20%	25V
C233	1-162-969-11	CERAMIC CHIP	0.0068uF	10%	25V
C234	1-162-969-11	CERAMIC CHIP	0.0068uF	10%	25V
C235	1-126-204-11	ELECT CHIP	47uF	20%	16V
C236	1-162-969-11	CERAMIC CHIP	0.0068uF	10%	25V
C237	1-162-969-11	CERAMIC CHIP	0.0068uF	10%	25V
C238	1-162-969-11	CERAMIC CHIP	0.0068uF	10%	25V
C239	1-162-969-11	CERAMIC CHIP	0.0068uF	10%	25V
C240	1-162-969-11	CERAMIC CHIP	0.0068uF	10%	25V
C241	1-162-969-11	CERAMIC CHIP	0.0068uF	10%	25V
C242	1-126-204-11	ELECT CHIP	47uF	20%	16V
C243	1-126-204-11	ELECT CHIP	47uF	20%	16V
C244	1-162-969-11	CERAMIC CHIP	0.0068uF	10%	25V
C245	1-162-969-11	CERAMIC CHIP	0.0068uF	10%	25V
C246	1-162-969-11	CERAMIC CHIP	0.0068uF	10%	25V
C247	1-162-969-11	CERAMIC CHIP	0.0068uF	10%	25V
C248	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C251	1-126-395-11	ELECT	22uF	20%	16V
C261	1-126-395-11	ELECT	22uF	20%	16V
C263	1-104-823-11	TANTAL. CHIP	47uF	20%	16V
C264	1-104-823-11	TANTAL. CHIP	47uF	20%	16V
C265	1-126-395-11	ELECT	22uF	20%	16V
C266	1-104-914-11	TANTAL. CHIP	22uF	20%	16V
C267	1-104-823-11	TANTAL. CHIP	47uF	20%	16V
C268	1-104-823-11	TANTAL. CHIP	47uF	20%	16V
C269	1-104-914-11	TANTAL. CHIP	22uF	20%	16V
C270	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C271	1-126-602-11	ELECT CHIP	3.3uF	20%	50V
C272	1-126-601-11	ELECT CHIP	2.2uF	20%	50V
C274	1-162-971-11	CERAMIC CHIP	0.001uF	10%	50V
C275	1-126-395-11	ELECT	22uF	20%	16V
C276	1-104-914-11	TANTAL. CHIP	22uF	20%	16V
C277	1-162-971-11	CERAMIC CHIP	0.001uF	10%	50V
C278	1-126-395-11	ELECT	22uF	20%	16V
C279	1-104-914-11	TANTAL. CHIP	22uF	20%	16V
C290	1-104-914-11	TANTAL. CHIP	22uF	20%	16V
C291	1-104-914-11	TANTAL. CHIP	22uF	20%	16V
C707	1-104-823-11	TANTAL. CHIP	47uF	20%	16V
C708	1-104-823-11	TANTAL. CHIP	47uF	20%	16V
C723	1-126-204-11	ELECT CHIP	47uF	20%	16V
C724	1-126-204-11	ELECT CHIP	47uF	20%	16V
C728	1-126-204-11	ELECT CHIP	47uF	20%	16V
C729	1-126-204-11	ELECT CHIP	47uF	20%	16V
C733	1-104-823-11	TANTAL. CHIP	47uF	20%	16V
C734	1-104-823-11	TANTAL. CHIP	47uF	20%	16V
C735	1-126-395-11	ELECT	22uF	20%	16V

AM-37

Ref. No.	Part No.	Description			Remarks
C741	1-126-395-11	ELECT	22uF	20%	16V
C742	1-126-395-11	ELECT	22uF	20%	16V
C743	1-126-395-11	ELECT	22uF	20%	16V
C747	1-104-914-11	TANTAL. CHIP	22uF	20%	16V
C751	1-126-204-11	ELECT CHIP	47uF	20%	16V
C752	1-126-204-11	ELECT CHIP	47uF	20%	16V
C753	1-104-914-11	TANTAL. CHIP	22uF	20%	16V
C754	1-104-914-11	TANTAL. CHIP	22uF	20%	16V
C755	1-104-823-11	TANTAL. CHIP	47uF	20%	16V
C757	1-126-395-11	ELECT	22uF	20%	16V
C758	1-126-395-11	ELECT	22uF	20%	16V
C759	1-104-823-11	TANTAL. CHIP	47uF	20%	16V
C760	1-126-602-11	ELECT CHIP	3.3uF	20%	50V
C762	1-104-823-11	TANTAL. CHIP	47uF	20%	16V
C763	1-104-914-11	TANTAL. CHIP	22uF	20%	16V
C764	1-104-823-11	TANTAL. CHIP	47uF	20%	16V
C765	1-104-914-11	TANTAL. CHIP	22uF	20%	16V
C766	1-104-823-11	TANTAL. CHIP	47uF	20%	16V
C771	1-126-204-11	ELECT CHIP	47uF	20%	16V
C772	1-126-204-11	ELECT CHIP	47uF	20%	16V
C773	1-104-914-11	TANTAL. CHIP	22uF	20%	16V
C774	1-164-361-11	CERAMIC CHIP	0.047uF		16V
C781	1-104-823-11	TANTAL. CHIP	47uF	20%	16V
C782	1-104-823-11	TANTAL. CHIP	47uF	20%	16V
C805	1-104-823-11	TANTAL. CHIP	47uF	20%	16V
C806	1-104-823-11	TANTAL. CHIP	47uF	20%	16V
C821	1-126-204-11	ELECT CHIP	47uF	20%	16V
C822	1-126-204-11	ELECT CHIP	47uF	20%	16V
C826	1-126-204-11	ELECT CHIP	47uF	20%	16V
C827	1-126-204-11	ELECT CHIP	47uF	20%	16V
C835	1-126-395-11	ELECT	22uF	20%	16V
C841	1-126-395-11	ELECT	22uF	20%	16V
C842	1-126-395-11	ELECT	22uF	20%	16V
C843	1-126-395-11	ELECT	22uF	20%	16V
C847	1-104-914-11	TANTAL. CHIP	22uF	20%	16V
C853	1-104-914-11	TANTAL. CHIP	22uF	20%	16V
C854	1-104-914-11	TANTAL. CHIP	22uF	20%	16V
C856	1-104-823-11	TANTAL. CHIP	47uF	20%	16V
C857	1-126-395-11	ELECT	22uF	20%	16V
C858	1-126-395-11	ELECT	22uF	20%	16V
C860	1-126-602-11	ELECT CHIP	3.3uF	20%	50V
C862	1-104-823-11	TANTAL. CHIP	47uF	20%	16V
C863	1-104-914-11	TANTAL. CHIP	22uF	20%	16V
C865	1-104-914-11	TANTAL. CHIP	22uF	20%	16V
C866	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C873	1-126-395-11	ELECT	22uF	20%	16V
C874	1-164-361-11	CERAMIC CHIP	0.047uF		16V
C901	1-162-967-11	CERAMIC CHIP	0.0033uF	10%	50V
C902	1-162-967-11	CERAMIC CHIP	0.0033uF	10%	50V
C903	1-162-967-11	CERAMIC CHIP	0.0033uF	10%	50V

Ref. No.	Part No.	Description			Remarks
C904	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C905	1-107-854-11	TANTAL. CHIP	68uF	20%	6.3V
C906	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C907	1-107-854-11	TANTAL. CHIP	68uF	20%	6.3V
C908	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C909	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C910	1-107-854-11	TANTAL. CHIP	68uF	20%	6.3V
C913	1-107-854-11	TANTAL. CHIP	68uF	20%	6.3V
C914	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C915	1-124-778-00	ELECT CHIP	22uF	20%	6.3V
C916	1-124-778-00	ELECT CHIP	22uF	20%	6.3V
C917	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C918	1-107-854-11	TANTAL. CHIP	68uF	20%	6.3V
C919	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C920	1-107-854-11	TANTAL. CHIP	68uF	20%	6.3V
C921	1-162-918-11	CERAMIC CHIP	18PF	5%	50V
C922	1-162-918-11	CERAMIC CHIP	18PF	5%	50V
C923	1-107-854-11	TANTAL. CHIP	68uF	20%	6.3V
C924	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C925	1-126-601-11	ELECT CHIP	2.2uF	20%	50V
C926	1-115-156-11	CERAMIC CHIP	1uF		10V
C929	1-124-778-00	ELECT CHIP	22uF	20%	6.3V
C930	1-107-854-11	TANTAL. CHIP	68uF	20%	6.3V
C931	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C932	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C933	1-107-854-11	TANTAL. CHIP	68uF	20%	6.3V
C934	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C935	1-107-854-11	TANTAL. CHIP	68uF	20%	6.3V
C936	1-107-854-11	TANTAL. CHIP	68uF	20%	6.3V
C937	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C938	1-126-601-11	ELECT CHIP	2.2uF	20%	50V
C939	1-115-156-11	CERAMIC CHIP	1uF		10V
C940	1-124-778-00	ELECT CHIP	22uF	20%	6.3V
C941	1-107-854-11	TANTAL. CHIP	68uF	20%	6.3V
C942	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C943	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C944	1-107-854-11	TANTAL. CHIP	68uF	20%	6.3V
C945	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C946	1-107-854-11	TANTAL. CHIP	68uF	20%	6.3V
C947	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C948	1-126-193-11	ELECT	1uF	20%	50V
C949	1-124-778-00	ELECT CHIP	22uF	20%	6.3V
C950	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C951	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C952	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C953	1-124-778-00	ELECT CHIP	22uF	20%	6.3V
C954	1-124-778-00	ELECT CHIP	22uF	20%	6.3V
C955	1-162-969-11	CERAMIC CHIP	0.0068uF	10%	25V
C956	1-162-969-11	CERAMIC CHIP	0.0068uF	10%	25V
C957	1-164-360-11	CERAMIC CHIP	0.1uF		16V

Ref. No.	Part No.	Description			Remarks
C958	1-162-969-11	CERAMIC CHIP	0.0068uF	10%	25V
C959	1-162-969-11	CERAMIC CHIP	0.0068uF	10%	25V
C960	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C961	1-162-969-11	CERAMIC CHIP	0.0068uF	10%	25V
C962	1-162-969-11	CERAMIC CHIP	0.0068uF	10%	25V
C963	1-124-778-00	ELECT CHIP	22uF	20%	6.3V
C964	1-124-778-00	ELECT CHIP	22uF	20%	6.3V
C965	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C966	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C967	1-124-778-00	ELECT CHIP	22uF	20%	6.3V
C968	1-124-778-00	ELECT CHIP	22uF	20%	6.3V
C969	1-162-969-11	CERAMIC CHIP	0.0068uF	10%	25V
C970	1-162-969-11	CERAMIC CHIP	0.0068uF	10%	25V
C971	1-162-969-11	CERAMIC CHIP	0.0068uF	10%	25V
C972	1-162-969-11	CERAMIC CHIP	0.0068uF	10%	25V
C973	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C974	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C975	1-162-969-11	CERAMIC CHIP	0.0068uF	10%	25V
C976	1-124-778-00	ELECT CHIP	22uF	20%	6.3V
C977	1-162-969-11	CERAMIC CHIP	0.0068uF	10%	25V
C978	1-124-778-00	ELECT CHIP	22uF	20%	6.3V
C979	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C980	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C981	1-162-967-11	CERAMIC CHIP	0.0033uF	10%	50V
C982	1-162-967-11	CERAMIC CHIP	0.0033uF	10%	50V
C983	1-162-967-11	CERAMIC CHIP	0.0033uF	10%	50V
C984	1-126-205-11	ELECT CHIP	47uF	20%	6.3V
C985	1-126-205-11	ELECT CHIP	47uF	20%	6.3V
C986	1-126-204-11	ELECT CHIP	47uF	20%	16V
C987	1-164-361-11	CERAMIC CHIP	0.047uF		16V
C988	1-164-361-11	CERAMIC CHIP	0.047uF		16V
C989	1-126-205-11	ELECT CHIP	47uF	20%	6.3V
C991	1-164-361-11	CERAMIC CHIP	0.047uF		16V

< CONNECTOR >

CN201	1-568-207-11	CONNECTOR, FPC (ZIF) 23P
CN202	1-566-543-31	CONNECTOR, FPC (NON ZIF) 11P
CN203	1-566-542-31	CONNECTOR, FPC (NON ZIF) 10P
CN204	1-566-532-11	CONNECTOR, FPC (ZIF) 16P
CN205	1-506-487-11	PIN, CONNECTOR 8P
CN206	1-506-483-21	PIN, CONNECTOR 4P
CN207	1-506-471-11	PIN, CONNECTOR 6P
CN208	1-764-007-11	PIN, CONNECTOR (SMD) 12P

< DIODE >

D231	8-719-200-27	DIODE	E10DS2
D232	8-719-200-27	DIODE	E10DS2
D701	8-719-800-76	DIODE	1SS226
D702	8-719-800-76	DIODE	1SS226
D703	8-719-800-76	DIODE	1SS226
D704	8-719-800-76	DIODE	1SS226
D705	8-719-800-76	DIODE	1SS226
D801	8-719-800-76	DIODE	1SS226
D802	8-719-800-76	DIODE	1SS226
D803	8-719-800-76	DIODE	1SS226

< IC >

IC201	8-759-100-96	IC	uPC4558G2
IC202	1-809-861-11	IC	NJM78L08UA
IC203	8-759-281-33	IC	NJM79L08UA
IC204	8-759-100-96	IC	uPC4558G2
IC205	8-759-100-96	IC	uPC4558G2
IC206	8-759-982-20	IC	RC78L02A
IC251	8-759-700-45	IC	NJM4556M-A
IC261	8-759-700-45	IC	NJM4556M-A
IC271	8-759-603-27	IC	M5201FP
IC272	8-759-603-27	IC	M5201FP
IC273	8-759-635-26	IC	M5283P
IC705	8-759-100-96	IC	uPC4558G2
IC706	8-759-100-96	IC	uPC4558G2
IC707	8-759-100-96	IC	uPC4558G2
IC709	8-759-100-96	IC	uPC4558G2
IC710	8-759-932-64	IC	BU4052BCF
IC711	8-759-932-64	IC	BU4052BCF
IC712	8-759-635-26	IC	M5283P
IC713	8-759-635-26	IC	M5283P
IC714	8-759-635-26	IC	M5283P
IC715	8-759-100-96	IC	uPC4558G2
IC716	8-759-603-27	IC	M5201FP
IC718	8-759-932-64	IC	BU4052BCF
IC719	8-759-100-96	IC	uPC4558G2
IC720	8-759-100-96	IC	uPC4558G2
IC803	8-759-100-96	IC	uPC4558G2
IC805	8-759-100-96	IC	uPC4558G2
IC806	8-759-100-96	IC	uPC4558G2
IC816	8-759-603-27	IC	M5201FP
IC820	8-759-100-96	IC	uPC4558G2
IC901	8-759-258-80	IC	YSS216B-F
IC902	8-759-258-80	IC	YSS216B-F
IC903	8-759-279-51	IC	LC32464M-80-TLM
IC904	8-759-279-51	IC	LC32464M-80-TLM
IC905	8-759-284-43	IC	LC7886M-TE-R
IC906	8-759-284-43	IC	LC7886M-TE-R
IC907	8-759-327-78	IC	TC9404FN-EL
IC908	8-759-327-78	IC	TC9404FN-EL
IC909	8-759-268-41	IC	SN74HC4020ANS
IC910	8-759-232-84	IC	TC74HC175AF
IC911	8-759-925-74	IC	SN74HC04ANS
IC912	8-759-937-56	IC	S-8054ALB-LM-S
IC913	8-759-100-96	IC	uPC4558G2
IC914	8-759-100-96	IC	uPC4558G2
IC915	8-759-100-96	IC	uPC4558G2

AM-37

Ref. No.	Part No.	Description	Remarks
IC916	8-759-100-96	IC uPC4558G2	
IC917	8-759-100-96	IC uPC4558G2	
IC918	8-759-100-96	IC uPC4558G2	
IC919	8-759-708-12	IC NJM78L12A	
IC920	8-759-822-XX	IC L88MS05T-FA	
IC922	8-759-100-96	IC uPC4558G2	
IC923	8-759-100-96	IC uPC4558G2	
		< COIL >	
L201	1-410-671-31	INDUCTOR 47uH	
L202	1-410-671-31	INDUCTOR 47uH	
L203	1-412-031-11	INDUCTOR CHIP 47uH	
L901	1-412-029-11	INDUCTOR CHIP 10uH	
L902	1-412-029-11	INDUCTOR CHIP 10uH	
L903	1-410-381-11	INDUCTOR CHIP 10uH	
L904	1-410-381-11	INDUCTOR CHIP 10uH	
L905	1-410-381-11	INDUCTOR CHIP 10uH	
L906	1-410-381-11	INDUCTOR CHIP 10uH	
L907	1-410-381-11	INDUCTOR CHIP 10uH	
L908	1-410-381-11	INDUCTOR CHIP 10uH	
L909	1-410-381-11	INDUCTOR CHIP 10uH	
L910	1-410-381-11	INDUCTOR CHIP 10uH	
L911	1-412-029-11	INDUCTOR CHIP 10uH	
L912	1-412-029-11	INDUCTOR CHIP 10uH	
L913	1-412-029-11	INDUCTOR CHIP 10uH	
		< TRANSISTOR >	
Q201	8-729-900-53	TRANSISTOR DTC114EK	
Q202	8-729-900-53	TRANSISTOR DTC114EK	
Q203	8-729-900-53	TRANSISTOR DTC114EK	
Q204	8-729-900-53	TRANSISTOR DTC114EK	
Q205	8-729-900-53	TRANSISTOR DTC114EK	
Q206	8-729-900-53	TRANSISTOR DTC114EK	
Q207	8-729-900-53	TRANSISTOR DTC114EK	
Q231	8-729-101-07	TRANSISTOR 2SB798-DL	
Q251	8-729-202-38	TRANSISTOR 2SC3326N-A	
Q252	8-729-202-38	TRANSISTOR 2SC3326N-A	
Q261	8-729-202-38	TRANSISTOR 2SC3326N-A	
Q262	8-729-202-38	TRANSISTOR 2SC3326N-A	
Q271	8-729-901-04	TRANSISTOR DTA114EK	
Q272	8-729-901-06	TRANSISTOR DTA144EK	
		< RESISTOR >	
R201	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R202	1-216-834-11	METAL CHIP 12K 5% 1/16W	
R203	1-216-829-11	METAL CHIP 4.7K 5% 1/16W	
R204	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R205	1-216-825-11	METAL CHIP 2.2K 5% 1/16W	
R206	1-216-813-11	METAL CHIP 220 5% 1/16W	
R207	1-216-813-11	METAL CHIP 220 5% 1/16W	
R208	1-216-813-11	METAL CHIP 220 5% 1/16W	
R209	1-216-813-11	METAL CHIP 220 5% 1/16W	
R211	1-216-833-11	METAL CHIP 10K 5% 1/16W	

Ref. No.	Part No.	Description	Remarks
R212	1-216-834-11	METAL CHIP 12K 5% 1/16W	
R213	1-216-829-11	METAL CHIP 4.7K 5% 1/16W	
R214	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R215	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R216	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R217	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R221	1-216-845-11	METAL CHIP 100K 5% 1/16W	
R222	1-216-845-11	METAL CHIP 100K 5% 1/16W	
R223	1-216-845-11	METAL CHIP 100K 5% 1/16W	
R224	1-216-845-11	METAL CHIP 100K 5% 1/16W	
R225	1-216-845-11	METAL CHIP 100K 5% 1/16W	
R226	1-216-845-11	METAL CHIP 100K 5% 1/16W	
R227	1-216-841-11	METAL CHIP 47K 5% 1/16W	
R231	1-216-841-11	METAL CHIP 47K 5% 1/16W	
R232	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R233	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R234	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R235	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R240	1-216-813-11	METAL CHIP 220 5% 1/16W	
R241	1-216-813-11	METAL CHIP 220 5% 1/16W	
R242	1-216-813-11	METAL CHIP 220 5% 1/16W	
R243	1-216-813-11	METAL CHIP 220 5% 1/16W	
R244	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R245	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R252	1-216-849-11	METAL CHIP 220K 5% 1/16W	
R253	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R254	1-216-043-91	METAL GLAZE 560 5% 1/10W	
R255	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R256	1-216-043-91	METAL GLAZE 560 5% 1/10W	
R257	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R258	1-216-845-11	METAL CHIP 100K 5% 1/16W	
R261	1-216-071-00	METAL CHIP 8.2K 5% 1/10W	
R262	1-216-849-11	METAL CHIP 220K 5% 1/16W	
R263	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R264	1-216-043-91	METAL GLAZE 560 5% 1/10W	
R265	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R266	1-216-043-91	METAL GLAZE 560 5% 1/10W	
R267	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R268	1-216-845-11	METAL CHIP 100K 5% 1/16W	
R270	1-216-828-11	METAL CHIP 3.9K 5% 1/16W	
R271	1-216-841-11	METAL CHIP 47K 5% 1/16W	
R272	1-216-841-11	METAL CHIP 47K 5% 1/16W	
R273	1-216-841-11	METAL CHIP 47K 5% 1/16W	
R274	1-216-841-11	METAL CHIP 47K 5% 1/16W	
R275	1-216-849-11	METAL CHIP 220K 5% 1/16W	
R276	1-216-845-11	METAL CHIP 100K 5% 1/16W	
R277	1-216-071-00	METAL CHIP 8.2K 5% 1/10W	
R278	1-216-836-11	METAL CHIP 18K 5% 1/16W	
R279	1-216-824-11	METAL CHIP 1.8K 5% 1/16W	
R280	1-216-864-11	METAL CHIP 0 5% 1/16W	

Ref. No.	Part No.	Description			Remarks
R281	1-216-849-11	METAL CHIP	220K	5%	1/16W
R282	1-216-833-11	METAL CHIP	10K	5%	1/16W
R283	1-216-828-11	METAL CHIP	3.9K	5%	1/16W
R284	1-216-836-11	METAL CHIP	18K	5%	1/16W
R285	1-216-824-11	METAL CHIP	1.8K	5%	1/16W
R286	1-216-841-11	METAL CHIP	47K	5%	1/16W
R287	1-216-071-00	METAL CHIP	8.2K	5%	1/10W
R288	1-216-842-11	METAL CHIP	56K	5%	1/16W
R289	1-216-849-11	METAL CHIP	220K	5%	1/16W
R290	1-216-833-11	METAL CHIP	10K	5%	1/16W
R291	1-216-296-91	CONDUCTOR CHIP (3216)			
R292	1-216-296-91	CONDUCTOR CHIP (3216)			
R293	1-216-045-00	METAL CHIP	680	5%	1/10W
R294	1-216-045-00	METAL CHIP	680	5%	1/10W
R295	1-216-045-00	METAL CHIP	680	5%	1/10W
R296	1-216-045-00	METAL CHIP	680	5%	1/10W
R297	1-216-993-11	METAL GLAZE	2.4K	5%	1/16W
R298	1-216-821-11	METAL CHIP	1K	5%	1/16W
R299	1-216-842-11	METAL CHIP	56K	5%	1/16W
R300	1-216-849-11	METAL CHIP	220K	5%	1/16W
R301	1-216-296-91	CONDUCTOR CHIP (3216)			
R302	1-216-296-91	CONDUCTOR CHIP (3216)			
R305	1-216-813-11	METAL CHIP	220	5%	1/16W
R306	1-216-813-11	METAL CHIP	220	5%	1/16W
R307	1-216-813-11	METAL CHIP	220	5%	1/16W
R308	1-216-813-11	METAL CHIP	220	5%	1/16W
R309	1-216-813-11	METAL CHIP	220	5%	1/16W
R310	1-216-813-11	METAL CHIP	220	5%	1/16W
R311	1-216-813-11	METAL CHIP	220	5%	1/16W
R312	1-216-813-11	METAL CHIP	220	5%	1/16W
R313	1-216-813-11	METAL CHIP	220	5%	1/16W
R314	1-216-813-11	METAL CHIP	220	5%	1/16W
R315	1-216-813-11	METAL CHIP	220	5%	1/16W
R316	1-216-813-11	METAL CHIP	220	5%	1/16W
R317	1-216-813-11	METAL CHIP	220	5%	1/16W
R318	1-216-813-11	METAL CHIP	220	5%	1/16W
R319	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R321	1-216-813-11	METAL CHIP	220	5%	1/16W
R322	1-216-813-11	METAL CHIP	220	5%	1/16W
R323	1-216-813-11	METAL CHIP	220	5%	1/16W
R324	1-216-813-11	METAL CHIP	220	5%	1/16W
R325	1-216-813-11	METAL CHIP	220	5%	1/16W
R326	1-216-813-11	METAL CHIP	220	5%	1/16W
R327	1-216-813-11	METAL CHIP	220	5%	1/16W
R328	1-216-813-11	METAL CHIP	220	5%	1/16W
R329	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R331	1-216-813-11	METAL CHIP	220	5%	1/16W
R332	1-216-813-11	METAL CHIP	220	5%	1/16W

Ref. No.	Part No.	Description			Remarks
R333	1-216-813-11	METAL CHIP	220	5%	1/16W
R335	1-216-813-11	METAL CHIP	220	5%	1/16W
R702	1-216-821-11	METAL CHIP	1K	5%	1/16W
R703	1-218-272-11	METAL GLAZE	5.1K	5%	1/16W
R706	1-216-821-11	METAL CHIP	1K	5%	1/16W
R707	1-218-272-11	METAL GLAZE	5.1K	5%	1/16W
R712	1-216-821-11	METAL CHIP	1K	5%	1/16W
R713	1-218-272-11	METAL GLAZE	5.1K	5%	1/16W
R716	1-216-821-11	METAL CHIP	1K	5%	1/16W
R717	1-218-272-11	METAL GLAZE	5.1K	5%	1/16W
R722	1-216-821-11	METAL CHIP	1K	5%	1/16W
R723	1-218-272-11	METAL GLAZE	5.1K	5%	1/16W
R725	1-216-849-11	METAL CHIP	220K	5%	1/16W
R726	1-216-821-11	METAL CHIP	1K	5%	1/16W
R727	1-218-272-11	METAL GLAZE	5.1K	5%	1/16W
R728	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R729	1-216-833-11	METAL CHIP	10K	5%	1/16W
R731	1-216-814-11	METAL CHIP	270	5%	1/16W
R732	1-216-814-11	METAL CHIP	270	5%	1/16W
R733	1-216-814-11	METAL CHIP	270	5%	1/16W
R734	1-216-814-11	METAL CHIP	270	5%	1/16W
R735	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R736	1-216-833-11	METAL CHIP	10K	5%	1/16W
R750	1-216-849-11	METAL CHIP	220K	5%	1/16W
R751	1-216-833-11	METAL CHIP	10K	5%	1/16W
R752	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R753	1-216-839-11	METAL CHIP	33K	5%	1/16W
R754	1-216-833-11	METAL CHIP	10K	5%	1/16W
R755	1-216-833-11	METAL CHIP	10K	5%	1/16W
R756	1-216-829-11	METAL CHIP	4.7	5%	1/16W
R757	1-216-839-11	METAL CHIP	33K	5%	1/16W
R758	1-216-833-11	METAL CHIP	10K	5%	1/16W
R759	1-216-849-11	METAL CHIP	220K	5%	1/16W
R761	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R762	1-216-833-11	METAL CHIP	10K	5%	1/16W
R763	1-218-345-11	METAL GLAZE	9.1K	5%	1/16W
R764	1-216-833-11	METAL CHIP	10K	5%	1/16W
R766	1-216-833-11	METAL CHIP	10K	5%	1/16W
R767	1-216-849-11	METAL CHIP	220K	5%	1/16W
R770	1-216-833-11	METAL CHIP	10K	5%	1/16W
R771	1-216-849-11	METAL CHIP	220K	5%	1/16W
R772	1-216-849-11	METAL CHIP	220K	5%	1/16W
R773	1-216-849-11	METAL CHIP	220K	5%	1/16W
R774	1-216-842-11	METAL CHIP	56K	5%	1/16W
R775	1-216-833-11	METAL CHIP	10K	5%	1/16W
R776	1-216-833-11	METAL CHIP	10K	5%	1/16W
R777	1-216-836-11	METAL CHIP	18K	5%	1/16W
R778	1-216-842-11	METAL CHIP	56K	5%	1/16W
R779	1-216-849-11	METAL CHIP	220K	5%	1/16W
R780	1-216-993-11	METAL GLAZE	2.4K	5%	1/16W

AM-37

Ref. No.	Part No.	Description			Remarks
R781	1-216-849-11	METAL CHIP	220K	5%	1/16W
R783	1-216-833-11	METAL CHIP	10K	5%	1/16W
R784	1-216-842-11	METAL CHIP	56K	5%	1/16W
R785	1-216-833-11	METAL CHIP	10K	5%	1/16W
R786	1-216-833-11	METAL CHIP	10K	5%	1/16W
R793	1-216-864-11	METAL CHIP	0	5%	1/16W
R794	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R795	1-216-833-11	METAL CHIP	10K	5%	1/16W
R802	1-216-821-11	METAL CHIP	1K	5%	1/16W
R803	1-218-272-11	METAL GLAZE	5.1K	5%	1/16W
R806	1-216-821-11	METAL CHIP	1K	5%	1/16W
R807	1-218-272-11	METAL GLAZE	5.1K	5%	1/16W
R812	1-216-821-11	METAL CHIP	1K	5%	1/16W
R813	1-218-272-11	METAL GLAZE	5.1K	5%	1/16W
R816	1-216-821-11	METAL CHIP	1K	5%	1/16W
R817	1-218-272-11	METAL GLAZE	5.1K	5%	1/16W
R822	1-216-821-11	METAL CHIP	1K	5%	1/16W
R823	1-218-272-11	METAL GLAZE	5.1K	5%	1/16W
R825	1-216-849-11	METAL CHIP	220K	5%	1/16W
R826	1-216-821-11	METAL CHIP	1K	5%	1/16W
R827	1-218-272-11	METAL GLAZE	5.1K	5%	1/16W
R828	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R829	1-216-833-11	METAL CHIP	10K	5%	1/16W
R831	1-216-814-11	METAL CHIP	270	5%	1/16W
R832	1-216-814-11	METAL CHIP	270	5%	1/16W
R833	1-216-814-11	METAL CHIP	270	5%	1/16W
R834	1-216-814-11	METAL CHIP	270	5%	1/16W
R835	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R836	1-216-833-11	METAL CHIP	10K	5%	1/16W
R850	1-216-849-11	METAL CHIP	220K	5%	1/16W
R851	1-216-833-11	METAL CHIP	10K	5%	1/16W
R852	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R853	1-216-839-11	METAL CHIP	33K	5%	1/16W
R854	1-216-833-11	METAL CHIP	10K	5%	1/16W
R855	1-216-833-11	METAL CHIP	10K	5%	1/16W
R856	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R857	1-216-839-11	METAL CHIP	33K	5%	1/16W
R858	1-216-833-11	METAL CHIP	10K	5%	1/16W
R859	1-216-849-11	METAL CHIP	220K	5%	1/16W
R861	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R862	1-216-833-11	METAL CHIP	10K	5%	1/16W
R863	1-218-345-11	METAL GLAZE	9.1K	5%	1/16W
R864	1-216-833-11	METAL CHIP	10K	5%	1/16W
R866	1-216-833-11	METAL CHIP	10K	5%	1/16W
R867	1-216-849-11	METAL CHIP	220K	5%	1/16W
R870	1-216-833-11	METAL CHIP	10K	5%	1/16W
R871	1-216-849-11	METAL CHIP	220K	5%	1/16W
R872	1-216-849-11	METAL CHIP	220K	5%	1/16W
R873	1-216-849-11	METAL CHIP	220K	5%	1/16W
R874	1-216-842-11	METAL CHIP	56K	5%	1/16W

Ref. No.	Part No.	Description			Remarks
R875	1-216-833-11	METAL CHIP	10K	5%	1/16W
R876	1-216-833-11	METAL CHIP	10K	5%	1/16W
R877	1-216-836-11	METAL CHIP	18K	5%	1/16W
R878	1-216-842-11	METAL CHIP	56K	5%	1/16W
R879	1-216-849-11	METAL CHIP	220K	5%	1/16W
R880	1-216-821-11	METAL CHIP	1K	5%	1/16W
R881	1-216-849-11	METAL CHIP	220K	5%	1/16W
R883	1-216-833-11	METAL CHIP	10K	5%	1/16W
R884	1-216-842-11	METAL CHIP	56K	5%	1/16W
R885	1-216-833-11	METAL CHIP	10K	5%	1/16W
R886	1-216-833-11	METAL CHIP	10K	5%	1/16W
R893	1-216-864-11	METAL CHIP	0	5%	1/16W
R894	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R895	1-216-833-11	METAL CHIP	10K	5%	1/16W
R901	1-216-295-91	CONDUCTOR, CHIP (2012)			
R903	1-216-841-11	METAL CHIP	47K	5%	1/16W
R904	1-216-841-11	METAL CHIP	47K	5%	1/16W
R905	1-216-841-11	METAL CHIP	47K	5%	1/16W
R906	1-216-841-11	METAL CHIP	47K	5%	1/16W
R907	1-216-857-11	METAL CHIP	1M	5%	1/16W
R908	1-216-833-11	METAL CHIP	10K	5%	1/16W
R911	1-216-833-11	METAL CHIP	10K	5%	1/16W
R914	1-216-849-11	METAL CHIP	220K	5%	1/16W
R915	1-216-849-11	METAL CHIP	220K	5%	1/16W
R916	1-216-821-11	METAL CHIP	1K	5%	1/16W
R917	1-216-820-11	METAL CHIP	820	5%	1/16W
R918	1-216-821-11	METAL CHIP	1K	5%	1/16W
R919	1-216-820-11	METAL CHIP	820	5%	1/16W
R920	1-216-833-11	METAL CHIP	10K	5%	1/16W
R921	1-216-833-11	METAL CHIP	10K	5%	1/16W
R922	1-216-833-11	METAL CHIP	10K	5%	1/16W
R923	1-216-833-11	METAL CHIP	10K	5%	1/16W
R924	1-216-813-11	METAL CHIP	220	5%	1/16W
R925	1-216-813-11	METAL CHIP	220	5%	1/16W
R926	1-216-849-11	METAL CHIP	220K	5%	1/16W
R927	1-216-833-11	METAL CHIP	10K	5%	1/16W
R928	1-216-849-11	METAL CHIP	220K	5%	1/16W
R929	1-216-833-11	METAL CHIP	10K	5%	1/16W
R930	1-216-295-91	CONDUCTOR, CHIP (2012)			
R932	1-216-841-11	METAL CHIP	47K	5%	1/16W
R933	1-216-841-11	METAL CHIP	47K	5%	1/16W
R934	1-216-841-11	METAL CHIP	47K	5%	1/16W
R935	1-216-841-11	METAL CHIP	47K	5%	1/16W
R936	1-216-857-11	METAL CHIP	1M	5%	1/16W
R937	1-216-833-11	METAL CHIP	10K	5%	1/16W
R940	1-216-833-11	METAL CHIP	10K	5%	1/16W
R943	1-216-849-11	METAL CHIP	220K	5%	1/16W
R944	1-216-849-11	METAL CHIP	220K	5%	1/16W
R945	1-216-821-11	METAL CHIP	1K	5%	1/16W
R946	1-216-820-11	METAL CHIP	820	5%	1/16W

Ref. No.	Part No.	Description			Remarks
R947	1-216-821-11	METAL CHIP	1K	5%	1/16W
R948	1-216-820-11	METAL CHIP	820	5%	1/16W
R949	1-216-833-11	METAL CHIP	10K	5%	1/16W
R950	1-216-833-11	METAL CHIP	10K	5%	1/16W
R951	1-216-833-11	METAL CHIP	10K	5%	1/16W
R952	1-216-833-11	METAL CHIP	10K	5%	1/16W
R953	1-216-813-11	METAL CHIP	220	5%	1/16W
R954	1-216-813-11	METAL CHIP	220	5%	1/16W
R955	1-216-849-11	METAL CHIP	220K	5%	1/16W
R956	1-216-833-11	METAL CHIP	10K	5%	1/16W
R957	1-216-849-11	METAL CHIP	220K	5%	1/16W
R958	1-216-296-91	CONDUCTOR CHIP (3216)			
R959	1-216-296-91	CONDUCTOR CHIP (3216)			
R964	1-216-833-11	METAL CHIP	10K	5%	1/16W
R965	1-216-849-11	METAL CHIP	220K	5%	1/16W
R966	1-216-833-11	METAL CHIP	10K	5%	1/16W
R969	1-216-841-11	METAL CHIP	47K	5%	1/16W
R970	1-216-841-11	METAL CHIP	47K	5%	1/16W
R971	1-216-841-11	METAL CHIP	47K	5%	1/16W
R972	1-216-841-11	METAL CHIP	47K	5%	1/16W
R973	1-216-841-11	METAL CHIP	47K	5%	1/16W
R974	1-216-841-11	METAL CHIP	47K	5%	1/16W
R975	1-216-849-11	METAL CHIP	220K	5%	1/16W
R976	1-216-849-11	METAL CHIP	220K	5%	1/16W
R977	1-216-849-11	METAL CHIP	220K	5%	1/16W
R978	1-216-849-11	METAL CHIP	220K	5%	1/16W
R980	1-216-864-11	METAL CHIP	0	5%	1/16W
R981	1-216-841-11	METAL CHIP	47K	5%	1/16W

< VARIABLE RESISTOR >

RV201	1-223-530-11	RES, VAR, CARBON 20K/20K (MAIN P1)
RV202	1-223-530-11	RES, VAR, CARBON 20K/20K (SUB P1)
RV203	1-223-530-11	RES, VAR, CARBON 20K/20K (MAIN P2)
RV204	1-223-530-11	RES, VAR, CARBON 20K/20K (SUB P2)
RV205	1-223-530-11	RES, VAR, CARBON 20K/20K (AUX 1)
RV206	1-223-530-11	RES, VAR, CARBON 20K/20K (MONI OUT)

< SWITCH >

S201	1-570-865-11	SWITCH, SLIDE (AUDIO INPUT LEVEL)

< VIBRATOR >

X901	1-577-274-11	VIBRATOR, CRYSTAL (16.9344MHz)

* A-7066-876-A CP-75(P) BOARD, COMPLETE
(Ref. No. 2,000 Series)
****

< CAPACITOR >

C001	1-164-360-11	CERAMIC CHIP	0.1uF	16V
C002	1-164-360-11	CERAMIC CHIP	0.1uF	16V
C006	1-164-360-11	CERAMIC CHIP	0.1uF	16V
C009	1-164-360-11	CERAMIC CHIP	0.1uF	16V
C010	1-164-360-11	CERAMIC CHIP	0.1uF	16V
C011	1-164-360-11	CERAMIC CHIP	0.1uF	16V
C039	1-162-957-11	CERAMIC CHIP	220PF 5%	50V
C040	1-162-957-11	CERAMIC CHIP	220PF 5%	50V
C051	1-164-360-11	CERAMIC CHIP	0.1uF	16V
C052	1-164-360-11	CERAMIC CHIP	0.1uF	16V
C056	1-164-360-11	CERAMIC CHIP	0.1uF	16V
C500	1-126-193-11	ELECT	1uF 20%	50V
C501	1-124-778-00	ELECT CHIP	22uF 20%	6.3V
C502	1-162-917-11	CERAMIC CHIP	15PF 5%	50V
C503	1-162-917-11	CERAMIC CHIP	15PF 5%	50V
C504	1-162-926-11	CERAMIC CHIP	82PF 5%	50V
C505	1-164-360-11	CERAMIC CHIP	0.1uF	16V
C506	1-164-360-11	CERAMIC CHIP	0.1uF	16V
C507	1-164-360-11	CERAMIC CHIP	0.1uF	16V
C508	1-162-917-11	CERAMIC CHIP	15PF 5%	50V
C509	1-164-360-11	CERAMIC CHIP	0.1uF	16V
C510	1-162-917-11	CERAMIC CHIP	15PF 5%	50V
C511	1-164-360-11	CERAMIC CHIP	0.1uF	16V
C512	1-164-360-11	CERAMIC CHIP	0.1uF	16V
C515	1-164-360-11	CERAMIC CHIP	0.1uF	16V
C516	1-164-360-11	CERAMIC CHIP	0.1uF	16V
C517	1-164-360-11	CERAMIC CHIP	0.1uF	16V
C518	1-164-360-11	CERAMIC CHIP	0.1uF	16V
C519	1-126-205-11	ELECT CHIP	47uF 20%	6.3V
C520	1-126-205-11	ELECT CHIP	47uF 20%	6.3V
C521	1-164-360-11	CERAMIC CHIP	0.1uF	16V
C522	1-125-445-11	CAPACITOR	0.22F	5.5V
C523	1-164-360-11	CERAMIC CHIP	0.1uF	16V
C524	1-164-360-11	CERAMIC CHIP	0.1uF	16V
C525	1-164-360-11	CERAMIC CHIP	0.1uF	16V
C526	1-164-360-11	CERAMIC CHIP	0.1uF	16V
C527	1-164-360-11	CERAMIC CHIP	0.1uF	16V
C528	1-164-360-11	CERAMIC CHIP	0.1uF	16V
C529	1-164-360-11	CERAMIC CHIP	0.1uF	16V
C530	1-164-360-11	CERAMIC CHIP	0.1uF	16V
C531	1-164-360-11	CERAMIC CHIP	0.1uF	16V
C532	1-164-360-11	CERAMIC CHIP	0.1uF	16V
C533	1-164-360-11	CERAMIC CHIP	0.1uF	16V
C534	1-162-917-11	CERAMIC CHIP	15PF 5%	50V
C535	1-162-917-11	CERAMIC CHIP	15PF 5%	50V
C536	1-164-360-11	CERAMIC CHIP	0.1uF	16V
C537	1-164-360-11	CERAMIC CHIP	0.1uF	16V
C538	1-164-360-11	CERAMIC CHIP	0.1uF	16V
C600	1-164-360-11	CERAMIC CHIP	0.1uF	16V
C601	1-164-360-11	CERAMIC CHIP	0.1uF	16V
C602	1-164-360-11	CERAMIC CHIP	0.1uF	16V

< CONNECTOR >

CN002	1-564-014-11	PIN, CONNECTOR 4P
CN500	1-569-030-11	CONNECTOR, FPC (ZIF) 21P
CN501	1-506-485-11	PIN, CONNECTOR 6P
* CN502	1-569-035-11	CONNECTOR, FPC (ZIF) 30P

CP-75

Ref. No.	Part No.	Description	Remarks
CN503	1-580-722-11	CONNECTOR, BOARD TO BOARD 28P	
CN504	1-580-722-11	CONNECTOR, BOARD TO BOARD 28P	
* CN600	1-569-035-11	CONNECTOR, FPC (ZIF) 30P	
		< DIODE >	
D003	8-719-914-44	DIODE DAP202K	
D053	8-719-914-44	DIODE DAP202K	
D500	8-719-801-78	DIODE 1SS184	
D501	8-719-105-52	DIODE RD3.6M-B2	
D502	8-719-980-78	DIODE ERA83-006	
D503	8-719-104-34	DIODE 1S2836	
		< FERRITE BEAD >	
FB005	1-412-390-21	INDUCTOR CHIP 0uH	
FB006	1-412-390-21	INDUCTOR CHIP 0uH	
FB055	1-412-390-21	INDUCTOR CHIP 0uH	
FB056	1-412-390-21	INDUCTOR CHIP 0uH	
FB500	1-412-390-21	INDUCTOR CHIP 0uH	
FB501	1-412-390-21	INDUCTOR CHIP 0uH	
FB502	1-412-390-21	INDUCTOR CHIP 0uH	
FB503	1-412-390-21	INDUCTOR CHIP 0uH	
FB504	1-412-390-21	INDUCTOR CHIP 0uH	
FB505	1-412-390-21	INDUCTOR CHIP 0uH	
FB506	1-412-390-21	INDUCTOR CHIP 0uH	
FB507	1-412-390-21	INDUCTOR CHIP 0uH	
FB508	1-412-390-21	INDUCTOR CHIP 0uH	
FB509	1-412-390-21	INDUCTOR CHIP 0uH	
FB510	1-412-390-21	INDUCTOR CHIP 0uH	
FB511	1-412-390-21	INDUCTOR CHIP 0uH	
FB512	1-412-390-21	INDUCTOR CHIP 0uH	
FB513	1-412-390-21	INDUCTOR CHIP 0uH	
FB514	1-412-390-21	INDUCTOR CHIP 0uH	
FB515	1-412-390-21	INDUCTOR CHIP 0uH	
FB516	1-412-390-21	INDUCTOR CHIP 0uH	
FB517	1-412-390-21	INDUCTOR CHIP 0uH	
FB518	1-412-390-21	INDUCTOR CHIP 0uH	
FB519	1-412-390-21	INDUCTOR CHIP 0uH	
FB520	1-412-390-21	INDUCTOR CHIP 0uH	
FB521	1-412-390-21	INDUCTOR CHIP 0uH	
FB522	1-412-390-21	INDUCTOR CHIP 0uH	
FB523	1-412-390-21	INDUCTOR CHIP 0uH	
FB524	1-412-390-21	INDUCTOR CHIP 0uH	
FB525	1-412-390-21	INDUCTOR CHIP 0uH	
FB526	1-412-390-21	INDUCTOR CHIP 0uH	
FB527	1-412-390-21	INDUCTOR CHIP 0uH	
FB528	1-412-390-21	INDUCTOR CHIP 0uH	
FB529	1-412-390-21	INDUCTOR CHIP 0uH	
FB530	1-412-390-21	INDUCTOR CHIP 0uH	
FB531	1-412-390-21	INDUCTOR CHIP 0uH	
FB532	1-412-390-21	INDUCTOR CHIP 0uH	
FB533	1-412-390-21	INDUCTOR CHIP 0uH	
FB534	1-412-390-21	INDUCTOR CHIP 0uH	
FB535	1-412-390-21	INDUCTOR CHIP 0uH	
FB536	1-412-390-21	INDUCTOR CHIP 0uH	
FB537	1-412-390-21	INDUCTOR CHIP 0uH	
FB538	1-412-390-21	INDUCTOR CHIP 0uH	
FB539	1-412-390-21	INDUCTOR CHIP 0uH	
FB540	1-412-390-21	INDUCTOR CHIP 0uH	
FB541	1-412-390-21	INDUCTOR CHIP 0uH	
FB543	1-412-390-21	INDUCTOR CHIP 0uH	
FB544	1-412-390-21	INDUCTOR CHIP 0uH	
FB545	1-412-390-21	INDUCTOR CHIP 0uH	
FB546	1-412-390-21	INDUCTOR CHIP 0uH	
FB547	1-412-390-21	INDUCTOR CHIP 0uH	
FB548	1-412-390-21	INDUCTOR CHIP 0uH	
FB549	1-412-390-21	INDUCTOR CHIP 0uH	
FB550	1-412-390-21	INDUCTOR CHIP 0uH	
FB551	1-412-390-21	INDUCTOR CHIP 0uH	
FB552	1-412-390-21	INDUCTOR CHIP 0uH	
FB553	1-412-390-21	INDUCTOR CHIP 0uH	
FB554	1-412-390-21	INDUCTOR CHIP 0uH	
FB555	1-412-390-21	INDUCTOR CHIP 0uH	
FB556	1-412-390-21	INDUCTOR CHIP 0uH	
FB557	1-412-390-21	INDUCTOR CHIP 0uH	
FB558	1-412-390-21	INDUCTOR CHIP 0uH	
FB559	1-412-390-21	INDUCTOR CHIP 0uH	
FB560	1-412-390-21	INDUCTOR CHIP 0uH	
FB561	1-412-390-21	INDUCTOR CHIP 0uH	
FB562	1-412-390-21	INDUCTOR CHIP 0uH	
FB563	1-412-390-21	INDUCTOR CHIP 0uH	
FB564	1-412-390-21	INDUCTOR CHIP 0uH	
FB565	1-412-390-21	INDUCTOR CHIP 0uH	
FB566	1-412-390-21	INDUCTOR CHIP 0uH	
FB567	1-412-390-21	INDUCTOR CHIP 0uH	
FB568	1-412-390-21	INDUCTOR CHIP 0uH	
		< IC >	
IC001	8-759-375-16	IC HD6473837H-C29	
IC002	8-759-335-86	IC XL-9040F-E2	
IC006	8-759-011-65	IC MC74HC4053F	
IC009	8-759-927-29	IC SN74HCU04ANS	
IC010	8-759-186-38	IC TC74VHC32F	
IC011	8-759-081-48	IC TC74VHC08F	
IC051	8-759-375-16	IC HD6473837H-C29	
IC052	8-759-335-86	IC XL-9040F-E2	
IC056	8-759-011-65	IC MC74HC4053F	
IC500	8-759-048-29	IC M37732S4AFP	
IC501	8-752-855-77	IC CXP80116-414Q	
IC502	8-759-937-56	IC S-8054ALB-LM-S	
IC503	8-759-925-80	IC SN74HC14ANS	
IC504	8-759-186-63	IC TC74VHC245F	
IC505	8-759-011-65	IC MC74HC4053F	

Ref. No.	Part No.	Description	Remarks
IC506	8-759-159-70	IC BR9021BF-E2	
IC507	8-759-186-63	IC TC74VHC245F	
IC508	8-759-186-32	IC TC74VHC21F	
IC509	8-759-176-24	IC M66800FP	
IC510	8-759-385-03	IC M27C4002-12F1-1902	
* IC510	1-526-662-21	SOCKET, IC (DP) 40P	
IC511	8-759-186-47	IC TC74VHC138F	
IC512	8-752-337-79	IC CXK58257AM-10LL	
IC513	8-752-337-79	IC CXK58257AM-10LL	
IC514	8-759-081-44	IC TC74VHC04F	
IC515	8-759-244-12	IC TC74AC175F	
IC516	8-759-186-38	IC TC74VHC32F	
IC517	8-759-186-47	IC TC74VHC138F	
IC518	8-752-327-37	IC CXD1500Q	
IC519	8-759-186-63	IC TC74VHC245F	
IC520	8-759-186-63	IC TC74VHC245F	
IC521	8-759-081-48	IC TC74VHC08F	
IC522	8-759-081-48	IC TC74VHC08F	
IC523	8-759-081-48	IC TC74VHC08F	
IC524	8-759-081-48	IC TC74VHC08F	
IC600	8-759-190-79	IC uPD72001GC-11-3B6	
IC601	8-759-186-38	IC TC74VHC32F	
IC602	8-759-190-79	IC uPD72001GC-11-3B6	
		< COIL >	
L501	1-412-029-11	INDUCTOR CHIP 10uH	
		< TRANSISTOR >	
Q001	8-729-901-01	TRANSISTOR DTC144EK	
Q002	8-729-901-01	TRANSISTOR DTC144EK	
Q051	8-729-901-01	TRANSISTOR DTC144EK	
Q052	8-729-901-01	TRANSISTOR DTC144EK	
Q500	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q501	8-729-216-22	TRANSISTOR 2SA1162-G	
Q502	8-729-901-01	TRANSISTOR DTC144EK	
		< RESISTOR >	
R002	1-216-864-11	METAL CHIP 0 5% 1/16W	
R003	1-216-864-11	METAL CHIP 0 5% 1/16W	
R005	1-216-864-11	METAL CHIP 0 5% 1/16W	
R006	1-216-864-11	METAL CHIP 0 5% 1/16W	
R009	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R010	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R011	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R012	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R013	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R014	1-216-801-11	METAL CHIP 22 5% 1/16W	
R015	1-216-801-11	METAL CHIP 22 5% 1/16W	
R016	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R017	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R018	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R019	1-216-833-11	METAL CHIP 10K 5% 1/16W	

Ref. No.	Part No.	Description	Remarks
R020	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R021	1-216-864-11	METAL CHIP 0 5% 1/16W	
R022	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R031	1-216-801-11	METAL CHIP 22 5% 1/16W	
R032	1-216-801-11	METAL CHIP 22 5% 1/16W	
R033	1-216-801-11	METAL CHIP 22 5% 1/16W	
R034	1-216-801-11	METAL CHIP 22 5% 1/16W	
R035	1-216-801-11	METAL CHIP 22 5% 1/16W	
R036	1-216-801-11	METAL CHIP 22 5% 1/16W	
R037	1-216-801-11	METAL CHIP 22 5% 1/16W	
R038	1-216-801-11	METAL CHIP 22 5% 1/16W	
R039	1-216-801-11	METAL CHIP 22 5% 1/16W	
R040	1-216-857-11	METAL CHIP 1M 5% 1/16W	
R041	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R042	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R043	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R044	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R050	1-216-830-11	METAL CHIP 5.6K 5% 1/16W	
R060	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R061	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R062	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R063	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R064	1-216-801-11	METAL CHIP 22 5% 1/16W	
R065	1-216-801-11	METAL CHIP 22 5% 1/16W	
R066	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R067	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R068	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R069	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R070	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R071	1-216-864-11	METAL CHIP 0 5% 1/16W	
R072	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R081	1-216-801-11	METAL CHIP 22 5% 1/16W	
R082	1-216-801-11	METAL CHIP 22 5% 1/16W	
R083	1-216-801-11	METAL CHIP 22 5% 1/16W	
R084	1-216-801-11	METAL CHIP 22 5% 1/16W	
R085	1-216-801-11	METAL CHIP 22 5% 1/16W	
R086	1-216-801-11	METAL CHIP 22 5% 1/16W	
R087	1-216-801-11	METAL CHIP 22 5% 1/16W	
R088	1-216-801-11	METAL CHIP 22 5% 1/16W	
R089	1-216-801-11	METAL CHIP 22 5% 1/16W	
R091	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R092	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R093	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R094	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R095	1-216-841-11	METAL CHIP 47K 5% 1/16W	
R096	1-216-841-11	METAL CHIP 47K 5% 1/16W	
R500	1-216-854-11	METAL CHIP 560K 5% 1/16W	
R501	1-216-864-11	METAL CHIP 0 5% 1/16W	
R502	1-216-857-11	METAL CHIP 1M 5% 1/16W	
R503	1-216-837-11	METAL CHIP 22K 5% 1/16W	

CP-75 DP-53

Ref. No.	Part No.	Description			Remarks
R504	1-216-837-11	METAL CHIP	22K	5%	1/16W
R505	1-216-841-11	METAL CHIP	47K	5%	1/16W
R506	1-216-841-11	METAL CHIP	47K	5%	1/16W
R507	1-216-837-11	METAL CHIP	22K	5%	1/16W
R513	1-216-841-11	METAL CHIP	47K	5%	1/16W
R515	1-216-841-11	METAL CHIP	47K	5%	1/16W
R517	1-216-841-11	METAL CHIP	47K	5%	1/16W
R519	1-216-841-11	METAL CHIP	47K	5%	1/16W
R543	1-216-841-11	METAL CHIP	47K	5%	1/16W
R547	1-216-864-11	METAL CHIP	0	5%	1/16W
R548	1-216-821-11	METAL CHIP	1K	5%	1/16W
R549	1-216-801-11	METAL CHIP	22	5%	1/16W
R551	1-216-864-11	METAL CHIP	0	5%	1/16W
R552	1-216-864-11	METAL CHIP	0	5%	1/16W
R553	1-216-864-11	METAL CHIP	0	5%	1/16W
R555	1-216-816-11	METAL CHIP	390	5%	1/16W
R556	1-216-841-11	METAL CHIP	47K	5%	1/16W
R557	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R559	1-216-806-11	METAL GLAZE	56	5%	1/16W
R562	1-216-833-11	METAL CHIP	10K	5%	1/16W
R563	1-216-837-11	METAL CHIP	22K	5%	1/16W
R584	1-216-837-11	METAL CHIP	22K	5%	1/16W
R585	1-216-841-11	METAL CHIP	47K	5%	1/16W
R586	1-216-841-11	METAL CHIP	47K	5%	1/16W
R587	1-216-841-11	METAL CHIP	47K	5%	1/16W
R588	1-216-841-11	METAL CHIP	47K	5%	1/16W
R589	1-216-841-11	METAL CHIP	47K	5%	1/16W
R590	1-216-841-11	METAL CHIP	47K	5%	1/16W
R591	1-216-837-11	METAL CHIP	22K	5%	1/16W
R592	1-216-841-11	METAL CHIP	47K	5%	1/16W
R593	1-216-841-11	METAL CHIP	47K	5%	1/16W
R594	1-216-841-11	METAL CHIP	47K	5%	1/16W
R595	1-216-841-11	METAL CHIP	47K	5%	1/16W
R596	1-216-837-11	METAL CHIP	22K	5%	1/16W
R597	1-216-837-11	METAL CHIP	22K	5%	1/16W
R598	1-216-837-11	METAL CHIP	22K	5%	1/16W
R600	1-216-837-11	METAL CHIP	22K	5%	1/16W
R601	1-216-837-11	METAL CHIP	22K	5%	1/16W
R602	1-216-837-11	METAL CHIP	22K	5%	1/16W
R603	1-216-837-11	METAL CHIP	22K	5%	1/16W
R604	1-216-841-11	METAL CHIP	47K	5%	1/16W
R625	1-216-841-11	METAL CHIP	47K	5%	1/16W
R626	1-216-841-11	METAL CHIP	47K	5%	1/16W
R627	1-216-841-11	METAL CHIP	47K	5%	1/16W
R628	1-216-841-11	METAL CHIP	47K	5%	1/16W
R629	1-216-841-11	METAL CHIP	47K	5%	1/16W
R630	1-216-864-11	METAL CHIP	0	5%	1/16W
R631	1-216-809-11	METAL CHIP	100	5%	1/16W
R632	1-216-809-11	METAL CHIP	100	5%	1/16W
R633	1-216-809-11	METAL CHIP	100	5%	1/16W
R638	1-216-864-11	METAL CHIP	0	5%	1/16W

Ref. No.	Part No.	Description			Remarks
R640	1-216-864-11	METAL CHIP	0	5%	1/16W
R641	1-216-864-11	METAL CHIP	0	5%	1/16W
R643	1-216-837-11	METAL CHIP	22K	5%	1/16W
R646	1-216-837-11	METAL CHIP	22K	5%	1/16W
R647	1-216-837-11	METAL CHIP	22K	5%	1/16W
R648	1-216-837-11	METAL CHIP	22K	5%	1/16W
R649	1-216-837-11	METAL CHIP	22K	5%	1/16W
R650	1-216-837-11	METAL CHIP	22K	5%	1/16W
R651	1-216-837-11	METAL CHIP	22K	5%	1/16W
R652	1-216-837-11	METAL CHIP	22K	5%	1/16W
R653	1-216-837-11	METAL CHIP	22K	5%	1/16W
R655	1-216-837-11	METAL CHIP	22K	5%	1/16W
R656	1-216-841-11	METAL CHIP	47K	5%	1/16W
R657	1-216-837-11	METAL CHIP	22K	5%	1/16W
R658	1-216-864-11	METAL CHIP	0	5%	1/16W
R659	1-216-864-11	METAL CHIP	0	5%	1/16W

< VIBRATOR >

X002	1-567-870-11	OSCILLATOR, CERAMIC (614KHz)
X500	1-579-070-41	VIBRATOR, CRYSTAL (16MHz)
X501	1-579-070-41	VIBRATOR, CRYSTAL (16MHz)
X502	1-577-720-11	VIBRATOR, CRYSTAL (14.7456MHz)

* A-7066-805-A DP-53 BOARD, COMPLETE
(Ref. No. 2,000 Series)
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1-751-563-11 CABLE, FLAT (FDP-1)

< CAPACITOR >

C801	1-126-205-11	ELECT CHIP	47uF	20%	6.3V
C802	1-126-205-11	ELECT CHIP	47uF	20%	6.3V
C803	1-126-193-11	ELECT	1uF	20%	50V
C804	1-124-778-00	ELECT CHIP	22uF	20%	6.3V
C805	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C806	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C807	1-163-231-11	CERAMIC CHIP	15PF	5%	50V
C808	1-163-231-11	CERAMIC CHIP	15PF	5%	50V
C809	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C901	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C902	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C904	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C905	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C906	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C907	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C908	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C909	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C910	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C911	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C912	1-163-038-91	CERAMIC CHIP	0.1uF		25V

Ref. No.	Part No.	Description			Remarks
C913	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C914	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C915	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C916	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C917	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C918	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C919	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C920	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C921	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C922	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C923	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C924	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C925	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C926	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C927	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C928	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C929	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C930	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C931	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C932	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C933	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C934	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C935	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C936	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C937	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C940	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C951	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C952	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C953	1-124-779-00	ELECT CHIP	10uF	20%	16V
C954	1-124-779-00	ELECT CHIP	10uF	20%	16V
C955	1-124-779-00	ELECT CHIP	10uF	20%	16V
C956	1-124-779-00	ELECT CHIP	10uF	20%	16V
C957	1-124-779-00	ELECT CHIP	10uF	20%	16V
C959	1-124-779-00	ELECT CHIP	10uF	20%	16V
C960	1-124-779-00	ELECT CHIP	10uF	20%	16V
C961	1-124-779-00	ELECT CHIP	10uF	20%	16V
C970	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C971	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C972	1-163-038-91	CERAMIC CHIP	0.1uF		25V
		< CONNECTOR >			
CN801	1-764-007-11	PIN, CONNECTOR (SMD) 12P			
* CN901	1-569-035-11	CONNECTOR, FPC (ZIF) 30P			
CN902	1-506-485-11	PIN, CONNECTOR 6P			
		< DIODE >			
D801	8-719-018-95	DIODE	CL-170SD-CD-T		
D802	8-719-018-95	DIODE	CL-170SD-CD-T		
D803	8-719-018-95	DIODE	CL-170SD-CD-T		
D804	8-719-018-95	DIODE	CL-170SD-CD-T		
D805	8-719-018-95	DIODE	CL-170SD-CD-T		

Ref. No.	Part No.	Description		Remarks
D806	8-719-018-95	DIODE	CL-170SD-CD-T	
D813	8-719-801-78	DIODE	1SS184	
D901	8-719-913-53	LED	LA-301VL	
D902	8-719-913-53	LED	LA-301VL	
D903	8-719-913-53	LED	LA-301VL	
D904	8-719-913-53	LED	LA-301VL	
D905	8-719-913-53	LED	LA-301VL	
D906	8-719-913-53	LED	LA-301VL	
D907	8-719-913-53	LED	LA-301VL	
D908	8-719-913-53	LED	LA-301VL	
D909	8-719-913-53	LED	LA-301VL	
D910	8-719-913-53	LED	LA-301VL	
D911	8-719-913-53	LED	LA-301VL	
D912	8-719-913-53	LED	LA-301VL	
D913	8-719-913-53	LED	LA-301VL	
D914	8-719-913-53	LED	LA-301VL	
D915	8-719-913-53	LED	LA-301VL	
D916	8-719-913-53	LED	LA-301VL	
D917	8-719-913-53	LED	LA-301VL	
D918	8-719-913-53	LED	LA-301VL	
D919	8-719-913-53	LED	LA-301VL	
D920	8-719-913-53	LED	LA-301VL	
D921	8-719-913-53	LED	LA-301VL	
D922	8-719-913-53	LED	LA-301VL	
D923	8-719-913-53	LED	LA-301VL	
D924	8-719-913-53	LED	LA-301VL	
D925	8-719-913-53	LED	LA-301VL	
D926	8-719-913-53	LED	LA-301VL	
D927	8-719-913-53	LED	LA-301VL	
D931	8-719-104-34	DIODE	1S2836	
D932	8-719-104-34	DIODE	1S2836	
D933	8-719-104-34	DIODE	1S2836	
D934	8-719-104-34	DIODE	1S2836	
D935	8-719-104-34	DIODE	1S2836	
D936	8-719-104-34	DIODE	1S2836	
D937	8-719-104-34	DIODE	1S2836	
D938	8-719-104-34	DIODE	1S2836	
D941	8-719-801-78	DIODE	1SS184	
D942	8-719-801-78	DIODE	1SS184	
D943	8-719-801-78	DIODE	1SS184	
D944	8-719-801-78	DIODE	1SS184	
D945	8-719-801-78	DIODE	1SS184	
D946	8-719-801-78	DIODE	1SS184	
D947	8-719-801-78	DIODE	1SS184	
D948	8-719-801-78	DIODE	1SS184	
D949	8-719-801-78	DIODE	1SS184	
D950	8-719-801-78	DIODE	1SS184	
D951	8-719-801-78	DIODE	1SS184	
D952	8-719-801-78	DIODE	1SS184	
D961	8-719-018-95	DIODE	CL-170SD-CD-T	

DP-53

Ref. No.	Part No.	Description	Remarks
D962	8-719-018-95	DIODE CL-170SD-CD-T	
D964	8-719-018-95	DIODE CL-170SD-CD-T	
D965	8-719-018-95	DIODE CL-170SD-CD-T	
D966	8-719-018-95	DIODE CL-170SD-CD-T	
D967	8-719-018-95	DIODE CL-170SD-CD-T	
D968	8-719-018-95	DIODE CL-170SD-CD-T	
D969	8-719-018-95	DIODE CL-170SD-CD-T	
D970	8-719-018-95	DIODE CL-170SD-CD-T	
D973	8-719-029-43	DIODE CL-140SD-CD-T	
D974	8-719-029-43	DIODE CL-140SD-CD-T	
D975	8-719-029-43	DIODE CL-140SD-CD-T	
D976	8-719-029-43	DIODE CL-140SD-CD-T	
D977	8-719-029-43	DIODE CL-140SD-CD-T	
D978	8-719-029-43	DIODE CL-140SD-CD-T	
D979	8-719-018-95	DIODE CL-170SD-CD-T	
D980	8-719-018-95	DIODE CL-170SD-CD-T	
D981	8-719-018-95	DIODE CL-170SD-CD-T	
D982	8-719-018-95	DIODE CL-170SD-CD-T	
		< FERRITE BEAD >	
FB801	1-543-813-21	FILTER, EMI	
FB802	1-543-813-21	FILTER, EMI	
FB803	1-543-813-21	FILTER, EMI	
FB804	1-543-813-21	FILTER, EMI	
FB805	1-543-813-21	FILTER, EMI	
FB806	1-543-813-21	FILTER, EMI	
FB901	1-543-813-21	FILTER, EMI	
FB902	1-543-813-21	FILTER, EMI	
FB903	1-543-813-21	FILTER, EMI	
		< IC >	
IC801	8-759-937-21	IC CXD1078M	
IC802	8-752-845-71	IC CXP81124-026R	
IC803	8-759-042-02	IC S80743AL-A7-S	
IC901	8-759-234-67	IC TMP82C79M-2	
IC902	8-759-234-67	IC TMP82C79M-2	
IC903	8-759-926-11	IC SN74HC138ANS	
IC904	8-759-232-86	IC TC74HC238AF(EL)	
IC905	8-759-232-86	IC TC74HC238AF(EL)	
IC906	8-759-926-77	IC SN74HC541ANS	
IC911	8-759-051-53	IC TD62381F	
IC912	8-759-051-53	IC TD62381F	
IC913	8-759-051-53	IC TD62381F	
IC914	8-759-051-53	IC TD62381F	
IC915	8-759-051-53	IC TD62381F	
IC916	8-759-232-86	IC TC74HC238AF(EL)	
IC917	8-759-232-86	IC TC74HC238AF(EL)	
		< COIL >	
L801	1-412-031-11	INDUCTOR CHIP 47uH	
L901	1-410-381-11	INDUCTOR CHIP 10uH	

Ref. No.	Part No.	Description	Remarks
		< SWITCH WITH LED >	
LS801	1-692-518-11	SWITCH, TACTIL (LS22BB-2SD/SD-T) (A-BUS: -)	
LS802	1-692-518-11	SWITCH, TACTIL (LS22BB-2SD/SD-T) (A-BUS: +)	
LS803	1-692-518-11	SWITCH, TACTIL (LS22BB-2SD/SD-T) (A-BUS: ON/OFF)	
LS804	1-692-518-11	SWITCH, TACTIL (LS22BB-2SD/SD-T) (B-BUS: -)	
LS805	1-692-518-11	SWITCH, TACTIL (LS22BB-2SD/SD-T) (B-BUS: +)	
LS806	1-692-518-11	SWITCH, TACTIL (LS22BB-2SD/SD-T) (B-BUS: ON/OFF)	
LS901	1-692-518-11	SWITCH, TACTIL (LS22BB-2SD/SD-T (EDIT NO.))	
LS902	1-692-518-11	SWITCH, TACTIL (LS22BB-2SD/SD-T) (SNAP SHOT)	
LS903	1-692-518-11	SWITCH, TACTIL (LS22BB-2SD/SD-T) (STORE)	
LS904	1-692-518-11	SWITCH, TACTIL (LS22BB-2SD/SD-T) (RECALL)	
LS905	1-692-518-11	SWITCH, TACTIL (LS22BB-2SD/SD-T) (EDIT MODIFY)	
LS906	1-692-518-11	SWITCH, TACTIL (LS22BB-2SD/SD-T) (LEARN)	
		< TRANSISTOR >	
Q901	8-729-904-48	TRANSISTOR DTB113EK	
Q902	8-729-904-48	TRANSISTOR DTB113EK	
Q903	8-729-904-48	TRANSISTOR DTB113EK	
Q904	8-729-904-48	TRANSISTOR DTB113EK	
Q905	8-729-904-48	TRANSISTOR DTB113EK	
Q906	8-729-904-48	TRANSISTOR DTB113EK	
Q907	8-729-904-48	TRANSISTOR DTB113EK	
Q908	8-729-904-48	TRANSISTOR DTB113EK	
Q909	8-729-904-48	TRANSISTOR DTB113EK	
Q910	8-729-904-48	TRANSISTOR DTB113EK	
Q911	8-729-904-48	TRANSISTOR DTB113EK	
Q912	8-729-904-48	TRANSISTOR DTB113EK	
Q913	8-729-904-48	TRANSISTOR DTB113EK	
Q914	8-729-904-48	TRANSISTOR DTB113EK	
Q915	8-729-904-48	TRANSISTOR DTB113EK	
Q916	8-729-904-48	TRANSISTOR DTB113EK	
Q917	8-729-904-48	TRANSISTOR DTB113EK	
Q918	8-729-904-48	TRANSISTOR DTB113EK	
Q919	8-729-904-48	TRANSISTOR DTB113EK	
Q920	8-729-904-48	TRANSISTOR DTB113EK	
Q921	8-729-904-48	TRANSISTOR DTB113EK	
Q922	8-729-904-48	TRANSISTOR DTB113EK	
Q923	8-729-904-48	TRANSISTOR DTB113EK	
Q930	8-729-901-06	TRANSISTOR DTA144EK	

Ref. No.	Part No.	Description			Remarks
		< RESISTOR >			
R816	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R817	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R818	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R819	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R820	1-216-121-91	METAL GLAZE	1M	5%	1/10W
R821	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R822	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R823	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R824	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R825	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R826	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R827	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R828	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R829	1-216-115-00	METAL CHIP	560K	5%	1/10W
R830	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R831	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R832	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R833	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R834	1-216-043-91	METAL GLAZE	560	5%	1/10W
R835	1-216-043-91	METAL GLAZE	560	5%	1/10W
R836	1-216-043-91	METAL GLAZE	560	5%	1/10W
R837	1-216-043-91	METAL GLAZE	560	5%	1/10W
R838	1-216-043-91	METAL GLAZE	560	5%	1/10W
R839	1-216-043-91	METAL GLAZE	560	5%	1/10W
R840	1-216-043-91	METAL GLAZE	560	5%	1/10W
R841	1-216-043-91	METAL GLAZE	560	5%	1/10W
R842	1-216-043-91	METAL GLAZE	560	5%	1/10W
R843	1-216-043-91	METAL GLAZE	560	5%	1/10W
R844	1-216-043-91	METAL GLAZE	560	5%	1/10W
R845	1-216-043-91	METAL GLAZE	560	5%	1/10W
R846	1-216-043-91	METAL GLAZE	560	5%	1/10W
R847	1-216-043-91	METAL GLAZE	560	5%	1/10W
R848	1-216-043-91	METAL GLAZE	560	5%	1/10W
R849	1-216-043-91	METAL GLAZE	560	5%	1/10W
R850	1-216-043-91	METAL GLAZE	560	5%	1/10W
R851	1-216-043-91	METAL GLAZE	560	5%	1/10W
R852	1-216-043-91	METAL GLAZE	560	5%	1/10W
R853	1-216-043-91	METAL GLAZE	560	5%	1/10W
R854	1-216-043-91	METAL GLAZE	560	5%	1/10W
R855	1-216-043-91	METAL GLAZE	560	5%	1/10W
R856	1-216-043-91	METAL GLAZE	560	5%	1/10W
R857	1-216-043-91	METAL GLAZE	560	5%	1/10W
R858	1-216-043-91	METAL GLAZE	560	5%	1/10W
R859	1-216-043-91	METAL GLAZE	560	5%	1/10W
R860	1-216-043-91	METAL GLAZE	560	5%	1/10W
R861	1-216-043-91	METAL GLAZE	560	5%	1/10W
R862	1-216-043-91	METAL GLAZE	560	5%	1/10W
R863	1-216-043-91	METAL GLAZE	560	5%	1/10W
R864	1-216-043-91	METAL GLAZE	560	5%	1/10W
R865	1-216-043-91	METAL GLAZE	560	5%	1/10W

Ref. No.	Part No.	Description			Remarks
R866	1-216-043-91	METAL GLAZE	560	5%	1/10W
R867	1-216-043-91	METAL GLAZE	560	5%	1/10W
R868	1-216-043-91	METAL GLAZE	560	5%	1/10W
R869	1-216-043-91	METAL GLAZE	560	5%	1/10W
R901	1-216-031-00	METAL CHIP	180	5%	1/10W
R902	1-216-031-00	METAL CHIP	180	5%	1/10W
R903	1-216-031-00	METAL CHIP	180	5%	1/10W
R904	1-216-031-00	METAL CHIP	180	5%	1/10W
R905	1-216-031-00	METAL CHIP	180	5%	1/10W
R906	1-216-031-00	METAL CHIP	180	5%	1/10W
R907	1-216-031-00	METAL CHIP	180	5%	1/10W
R908	1-216-031-00	METAL CHIP	180	5%	1/10W
R909	1-216-031-00	METAL CHIP	180	5%	1/10W
R910	1-216-031-00	METAL CHIP	180	5%	1/10W
R911	1-216-031-00	METAL CHIP	180	5%	1/10W
R912	1-216-031-00	METAL CHIP	180	5%	1/10W
R913	1-216-031-00	METAL CHIP	180	5%	1/10W
R914	1-216-031-00	METAL CHIP	180	5%	1/10W
R915	1-216-031-00	METAL CHIP	180	5%	1/10W
R916	1-216-031-00	METAL CHIP	180	5%	1/10W
R917	1-216-031-00	METAL CHIP	180	5%	1/10W
R918	1-216-031-00	METAL CHIP	180	5%	1/10W
R919	1-216-031-00	METAL CHIP	180	5%	1/10W
R920	1-216-031-00	METAL CHIP	180	5%	1/10W
R921	1-216-031-00	METAL CHIP	180	5%	1/10W
R922	1-216-031-00	METAL CHIP	180	5%	1/10W
R923	1-216-031-00	METAL CHIP	180	5%	1/10W
R924	1-216-031-00	METAL CHIP	180	5%	1/10W
R925	1-216-031-00	METAL CHIP	180	5%	1/10W
R926	1-216-031-00	METAL CHIP	180	5%	1/10W
R927	1-216-031-00	METAL CHIP	180	5%	1/10W
R928	1-216-031-00	METAL CHIP	180	5%	1/10W
R929	1-216-031-00	METAL CHIP	180	5%	1/10W
R930	1-216-031-00	METAL CHIP	180	5%	1/10W
R931	1-216-031-00	METAL CHIP	180	5%	1/10W
R932	1-216-031-00	METAL CHIP	180	5%	1/10W
R933	1-216-031-00	METAL CHIP	180	5%	1/10W
R934	1-216-031-00	METAL CHIP	180	5%	1/10W
R935	1-216-031-00	METAL CHIP	180	5%	1/10W
R936	1-216-031-00	METAL CHIP	180	5%	1/10W
R937	1-216-031-00	METAL CHIP	180	5%	1/10W
R938	1-216-031-00	METAL CHIP	180	5%	1/10W
R939	1-216-031-00	METAL CHIP	180	5%	1/10W
R940	1-216-031-00	METAL CHIP	180	5%	1/10W
R941	1-216-031-00	METAL CHIP	180	5%	1/10W
R942	1-216-031-00	METAL CHIP	180	5%	1/10W
R943	1-216-031-00	METAL CHIP	180	5%	1/10W
R944	1-216-031-00	METAL CHIP	180	5%	1/10W
R945	1-216-031-00	METAL CHIP	180	5%	1/10W
R946	1-216-031-00	METAL CHIP	180	5%	1/10W

DP-53 LC-51

Ref. No.	Part No.	Description			Remarks
R947	1-216-031-00	METAL CHIP	180	5%	1/10W
R948	1-216-031-00	METAL CHIP	180	5%	1/10W
R949	1-216-031-00	METAL CHIP	180	5%	1/10W
R950	1-216-031-00	METAL CHIP	180	5%	1/10W
R951	1-216-031-00	METAL CHIP	180	5%	1/10W
R955	1-216-031-00	METAL CHIP	180	5%	1/10W
R956	1-216-031-00	METAL CHIP	180	5%	1/10W
R957	1-216-031-00	METAL CHIP	180	5%	1/10W
R958	1-216-031-00	METAL CHIP	180	5%	1/10W
R959	1-216-031-00	METAL CHIP	180	5%	1/10W
R960	1-216-031-00	METAL CHIP	180	5%	1/10W
R961	1-216-031-00	METAL CHIP	180	5%	1/10W
R962	1-216-031-00	METAL CHIP	180	5%	1/10W
R963	1-216-031-00	METAL CHIP	180	5%	1/10W
R964	1-216-031-00	METAL CHIP	180	5%	1/10W
R965	1-216-031-00	METAL CHIP	180	5%	1/10W
R966	1-216-031-00	METAL CHIP	180	5%	1/10W
R970	1-216-031-00	METAL CHIP	180	5%	1/10W
R971	1-216-031-00	METAL CHIP	180	5%	1/10W
R972	1-216-031-00	METAL CHIP	180	5%	1/10W
R973	1-216-031-00	METAL CHIP	180	5%	1/10W
R974	1-216-031-00	METAL CHIP	180	5%	1/10W
R975	1-216-031-00	METAL CHIP	180	5%	1/10W
R976	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R977	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R978	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R979	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R980	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R981	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R982	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R983	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R984	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R985	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R986	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R989	1-216-031-00	METAL CHIP	180	5%	1/10W
R990	1-216-031-00	METAL CHIP	180	5%	1/10W
R991	1-216-031-00	METAL CHIP	180	5%	1/10W
R992	1-216-031-00	METAL CHIP	180	5%	1/10W
R993	1-216-031-00	METAL CHIP	180	5%	1/10W
R994	1-216-031-00	METAL CHIP	180	5%	1/10W
R995	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R997	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R998	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R999	1-216-089-91	METAL GLAZE	47K	5%	1/10W

< SWITCH >

S801	1-571-787-31	SWITCH, TACTILE(A-BUS EFFECT: SELECT)
S802	1-571-787-31	SWITCH, TACTILE(B-BUS EFFECT: SELECT)
S809	1-570-851-11	SWITCH, SLIDE(A-BUS MONO/STEREO SEL)
S810	1-570-851-11	SWITCH, SLIDE(B-BUS MONO/STEREO SEL)
S901	1-571-787-31	SWITCH, TACTILE(DIAL MENU: SET)
S902	1-571-787-31	SWITCH, TACTILE(DIAL MENU: DATA)
S903	1-571-787-31	SWITCH, TACTILE(DIAL MENU: MENU)
S904	1-571-787-31	SWITCH, TACTILE(SCREEN)
S905	1-571-787-31	SWITCH, TACTILE(+)
S906	1-571-787-31	SWITCH, TACTILE(-)
S907	1-571-787-31	SWITCH, TACTILE(DEL)
S908	1-571-787-31	SWITCH, TACTILE(DIS/ENA)
S909	1-571-787-31	SWITCH, TACTILE(A-BUS: P1)
S910	1-571-787-31	SWITCH, TACTILE(A-BUS: P2)
S911	1-571-787-31	SWITCH, TACTILE(A-BUS: AUX 1)
S912	1-571-787-31	SWITCH, TACTILE(B-BUS: P1)
S913	1-571-787-31	SWITCH, TACTILE(B-BUS: P2)
S914	1-571-787-31	SWITCH, TACTILE(B-BUS: AUX 1)
S915	1-571-787-31	SWITCH, TACTILE(PLAYER 2: RESET)
S916	1-571-787-31	SWITCH, TACTILE(PLAYER 1: RESET)
S917	1-571-787-31	SWITCH, TACTILE(RECORDER: RESET)

< VIBRATOR >

X801	1-579-428-21	VIBRATOR, CRYSTAL (12MHz)

* A-7066-809-A LC-51 BOARD, COMPLETE
(Ref. No. 9,000 Series)
****

7-685-646-79 SCREW +BVTP 3X8 TYPE2 IT-3

< CONNECTOR >

CN001	1-506-469-11	PIN, CONNECTOR 4P

< DIODE >

D008	8-719-977-03	DIODE DTZ5.6B
D009	8-719-977-03	DIODE DTZ5.6B
D058	8-719-977-03	DIODE DTZ5.6B
D059	8-719-977-03	DIODE DTZ5.6B

< JACK >

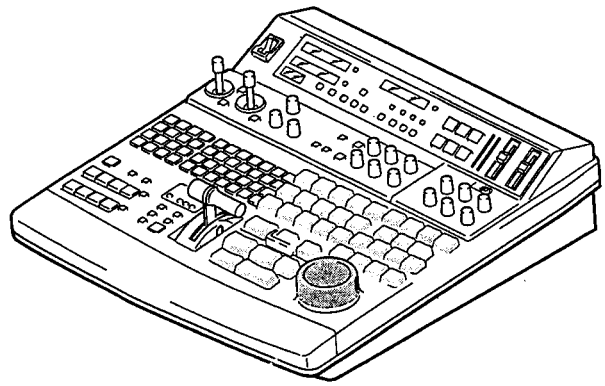
J002	1-691-258-11	JACK (LANC: PLAYER 1)
J052	1-691-258-11	JACK (LANC: PLAYER 2)

V13317

FXE-100P

SERVICE MANUAL

AEP Model
UK Model
E Model



SPECIFICATIONS

General

Signal system	PAL
Power requirements	AEP model: 220 – 230 V AC, 50/60 Hz UK model: 240 V AC, 50/60 Hz E model: 120 – 220 – 240 V AC, 50/60 Hz
Power consumtption	Maximum 52 W
Operating temperature	5°C to 40°C (41°F to 104°F)
Storage temperature	–20°C to +60°C (–4°F to 140°F)
Mass	Approximately 7.3 kg (16 lb 1 oz)
Dimensions (w/h/d)	424 × 138.5 × 437.5 mm (16 3/4 × 5 1/2 × 17 1/4 inches)

Editing controller functions

CPU	16 bit
Time counter	Internal time counter (× 3)
Time count display range	(hours:minutes:seconds:frames) • Time code: 00:00:00:00 to 23:59:59:24 • CTL: ±9:59:59:24
Edit modes	• Insert (channels: video, audio 1, audio 2) • Assemble • First edit • Time code insert • Split (audio split offset from video IN point) • Dynamic Motion Control (DMC)
Edit reference signals	• CTL signal • SMPTE/EBU time code (LTC) • 8 mm time code
Editing precision	RS-422 interface: ±0 frames (time code) ±1 frame (CTL) RS-232C interface: ±1 frame (time code)
Transition time range	0 to 999 (unit: frames)
Pinch-on delay	Simultaneous measurement of pinch-on delay for up to three VCRs connected to RS-422/RS-232C connectors. Measurement data stored in memory.
EDL memory capacity	99 edits

Control functions

VCR interfaces	
RS-422	RS-422 (D-sub 9-pin) × 3 PLAYER 1, PLAYER 2, RECORDER Connectable VCRs: Hi8: EVO-9850P/9800P S-VHS: SVO-9620, SVP-9020 Betacam: UVW-1800P (recorder) U-matic: VO-9800P/9850P
RS-232C	RS-232C (D-sub 9-pin) × 3 PLAYER 1, PLAYER 2, RECORDER Connectable VCRs: Hi8: EVO-9650P
VCR remote control functions	Playback, still playback, rewind, standby off, stop, jog control, shuttle control, record, eject, stop all VCRs
GPI interface	GPI OUT (BNC) × 2 GPI IN (BNC)
EDL interface	EDL IN/OUT (D-sub 9-pin)

Input connectors

Video input	
S-video	S VIDEO INPUT (mini DIN 4-pin) × 4, unbalanced PLAYER 1, PLAYER 2, AUX 1, RECORDER • Y: 1.0 V p-p, 75 Ω, sync negative • C: 0.3 V p-p, burst, 75 Ω • Sync: 0.3 Vp-p
Composite video	VIDEO INPUT (BNC) × 4, unbalanced PLAYER 1, PLAYER 2, AUX 1, RECORDER • Video: 1.0 V p-p,75 Ω, sync negative • Sync: 0.3 Vp-p • Burst: 0.3 Vp-p

– Continued on next page –

MICROFILM

VIDEO EDITING SYSTEM

SONY®

Audio input

Stereo	AUDIO L/R INPUT (phono jack), 2 channels × 5 PLAYER 1 MAIN (2), SUB (2) PLAYER 2 MAIN (2), SUB (2) RECORDER (2) AUX 1 (2) AUX 2 (2) Impedance selectable with 600 Ω termination switch. Input level: –7.5 dBs [1] (input impedance 47k Ω or above, 600 Ω switch OFF) +4 dBs [1] (input impedance 600 Ω, 600 Ω switch ON)
Microphone	MIC (monaural phone), unbalanced • Input level: –60 dBs [1] • Input impedance: 4.4 kΩ or above

Output connectors

Video ouput

S-video	S VIDEO OUTPUT (mini DIN 4-pin) × 2, unbalanced PGM 1, PGM 2 • Y: 1.0 V p-p, 75 Ω, sync negative • C: 0.3 V p-p, burst, 75 Ω • Sync: 0.3 Vp-p
Composite video	VIDEO OUTPUT (BNC) × 3, unbalanced PGM 1, PGM 2, MONITOR • Video: 1.0 V p-p,75 Ω, sync negative • Sync: 0.3 Vp-p • Burst: 0.3 Vp-p
Black burst	B.B OUT (BNC) × 4, unbalanced • Sync: 0.3 V p-p, 75 Ω • Burst: 0.3 V p-p, 75 Ω
Audio output (stereo)	AUDIO L/R OUTPUT (phono jack) × 6 PGM 1 (2), PGM 2 (2), MONITOR (2) PGM 1, PGM 2 output level selectable with –7.5dB/+4dB switch

1) 0 dBs = 0.775 Vrms

Video characteristics

Sampling rate	Y: 910 fH [1] R–Y, B–Y: 1/4 × 910 fH
Quantizing	Y, R–Y, B–Y: 8-bit
Frequency	0 to 5 MHz, +1dB/–4dB 53 dB or above

Accessories supplied

AC power cord (1)
Operating Instructions (1)
Handbook (1)

Design and specifications are subject to change without notice.

Accessories not supplied

Remote control cables
- RS-422: RCC-5G/10G/30G (9-pin 5 m/10 m/30 m or approx. 16 f/33 f/98 f)
- RS-232C: SMF-3036C (9-pin/25-pin null modem cable)

XLR 3-pin/phono jack cross cables
- RK-5XLRM (male, 5 m or approx. 16 f)
- RK-5XLRF (female, 5 m or approx. 16 f)

1) 1 fH = 15.625 kHz

SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety checks before releasing the set to the customer.

1. Check the area of your repair for unsoldered or poorly-soldered connections. Check the entire board surface for solder splashes and brides.

2. Check the interboard wiring to ensure that no wires are "pinched" or contact high-wattage resistors.

3. Look for unauthorized replacement parts, particularly transistors, that were installed during a previous repair. Point them out to the customer and recommend their replacement.

4. Look for parts which, throught functioning, show obvious signs of deterioration. Point them out to the customer and recommend their replace-ment.

5. Check the B+ voltage to see it is at the values specified.

6. Flexible Circuit Board Repairing
   - Keep the temperature of the soldering iron around 270 ℃ during repairing.
   - Do not touch the soldering iron on the same conductor of the circuit board (within 3 times).
   - Be careful not to apply force on the conductor when soldering or unsoldering.

WARNING FOR THE CUSTOMERS IN THE UNITED KINGDOM
THIS APPARATUS MUST BE EARTHED.

IMPORTANT
The wires in this mains lead are coloured in accordance with the following code:

Green-and-yellow:	Earth
Blue:	Neutral
Brown:	Live

As the colours of the wires in the mains lead of this apparatus may not correspond with the coloured markings identifying the terminals in your plug proceed as follows:
The wire which is coloured green-and-yellow must be connected to the terminal in the plug which is marked by the letter E or by the safety earth symbol ⏚ or coloured green or green-and-yellow.
The wire which is coloured blue must be connected to the terminal which is marked with the letter N or coloured black.
The wire which is coloured brown must be connected to the terminal which is marked with the letter L or coloured red.

Note
This appliance conforms with EEC Directive 87/308/EEC regarding interference suppression.

TABLE OF CONTENTS

Section	Title	Page
1. GENERAL		
Chapter 1	Outline	
	Features	1-1
	System Configuration Examples	1-3
	A-Roll and Cut Editing System	1-3
	A/B Roll Editing System (1)	1-3
	A/B Roll Editing System (2)	1-4
Chapter 2	Location and Function of Parts	
	Control Panel	1-5
	Editing Control and VCR Manual Control Section	1-5
	Time Counter Displays	1-8
	LEARN Button, SCREEN Section and DIAL MENU Section	1-9
	EDIT PGM (Program) Section	1-10
	Video Switcher and Special Effects Control Section	1-11
	Audio Mixer Section	1-16
	Connector Panel	1-17
Chapter 3	Preparations	
	Precautions	1-20
	Connections	1-20
	Player 1 and Player 2 VCR Connections	1-20
	Recorder VCR Connections	1-21
	Main Monitor and Program Monitor Connections	1-21
	Video Camera, CD Player and Microphone Connections	1-22
	Titler, Computer and Editing Controller Connections	1-22
	Switch Settings and System Setup	1-23
	About the Status Display	1-24
	VCR Preparations	1-26
Chapter 4	Before Starting to Edit	
	Controlling the VCRs	1-27
	Selecting a VCR	1-27
	Controlling Tape Transport Manually	1-27
	Searching for a Scene With the Search Dial	1-28
	Controlling the Speed of Dynamic Tracking (DT) Playback	1-29
	Selecting Video and Audio Signals	1-29
	Default Input and Output Signals	1-30
	Selecting the Same Source for Video and Audio Inputs to a Bus	1-30
	Selecting Different Sources for Video and Audio Inputs to a Bus	1-31
	Monitoring Video and Audio Signals	1-31
	Adjusting Video and Audio Signals	1-33
	Adjusting Video Signals	1-33
	Adjusting Audio Levels	1-34
Chapter 5	Editing Operations	
	Common Editing Procedures	1-36
	Selecting an Edit Mode	1-36
	Insert Mode	1-36
	Assemble Mode and First Edit Mode	1-37
	Selecting an Edit Type	1-39
	Cut Editing	1-39
	A-Roll Editing	1-40
	A/B Roll Editing	1-40
	Manual Effects and Sync Roll Editing	1-41
	Setting Edit Points	1-41
	Setting Edit Points	1-41
	Relation Between IN/OUT Points and Duration	1-43
	Checking, Cuing Up, Changing and Deleting Edit Points	1-44
	Selecting Special Effects	1-47
	Cut	1-47
	Dissolve	1-48
	Wipe	1-49
	Key	1-55
	Input Effects	1-57
	Setting the Transition Time	1-64
	Checking FROM and TO Sources	1-65
	Preview – The Rehearsal Before Edit Execution	1-65
	Executing the Edit	1-66
	Sync Grade During Previews and Edit Execution	1-67
	Automatic Execution of Multiple Edits – Auto Assembly	1-68
	Reviewing the Edit	1-69
Chapter 6	Advanced Editing	
	On the Fly Editing With Two Players – Sync Roll Editing	1-70
	Editing With Manual Special Effects	1-71
	Auto Transition Effects	1-72
	Setting Independent Video and Audio IN Points – Split Editing	1-73
	Editing Variable-Speed Playback – DMC Editing	1-75
	Editing With Fade In and Fade Out	1-77
	Fade In	1-77
	Fade Out	1-78
	Using Color Backgrounds	1-79
	Slide In and Slide Out Using a Color Background	1-79
	Recording Time Code – Time Code Insert	1-80

Section	Title	Page
Chapter 7	Managing Edit Data	
	About the EDL	1-81
	About Snapshots	1-82
	Using the EDL	1-82
	Registering an Edit in the EDL	1-83
	Recalling Edits From the EDL	1-83
	Revising and Deleting Edits	1-84
	Using Registered Edits in Automatic Editing	1-85
	Transferring Edits To and From External Equipment	1-85
Chapter 8	Setup Menu	
	Setup Menù Item Table	1-87
	Using the Setup Menu	1-87
	Setup Menu Items	1-88
	System Configuration	1-88
	Switcher	1-91
	External Interface and EDL	1-93
	VCR Device Constants	1-96
Appendixes		
	Error Messages	1-98
	In Case of Trouble	1-99
	Audio Signal Flow	1-100
	GPI Interface Effect Timing	1-102
	Wipe Patterns	1-102

2. DISASSEMBLY

1.	Removal of Top Cover Assy	2-1
2.	Removal of Rear Panel	2-2
3.	Removal of RE-25, RS-62, ED-41, MJ-65 Board and DC Motor	2-2
4.	Removal of DV-19, VI-128, MM-27 Board	2-3
5.	Removal of Power Block, FU-123 Board	2-3
6.	Removal of Fader Assy	2-4
7.	Removal of AM-32, KY-22 Board	2-4
8.	Removal of Search Dial Block Assy	2-5
9.	Removal of KS-15, CP-64, JS-25 Board	2-5
10.	Removal of DP-46, AS-46 Board and Meter Unit, LED Level	2-6
11.	Removal of Parts in Power Supply Block	2-6

3. DIAGRAMS

1.	Circuit Boards Location	3-1
2.	Overall Block Diagram	3-2
3.	Editor Block Diagram	3-6
4.	Audio Block Diagram	3-11
5.	Switcher (1) Block Diagram	3-15
6.	Switcher (2) Block Diagram	3-19
7.	Power Block Diagram	3-22
8.	Detailed Block Diagram	3-35

Section	Title	Page

4. PRINTED WIRING BOARDS AND DIAGRAMS

1.	Frame Schematic Diagram	4-1
2.	Printed Wiring Boards and Diagrams	
	• RE-25 (Video/Audio Input/Output) Board	4-4
	• DP-46 (Display) Board	4-10
	• CP-64 (Master CPU) Board	4-17
	• MM-27 (Frame Memory) Board	4-26
	• JS-25 (Joy Stick) Board	4-39
	• KY-22 (Key Edit) Board	4-43
	• RS-62 (RS-422/232C), ED-41 (EDL Input/Output) Boards	4-50
	• VI-126 (Video Input) Board	4-57
	• AM-32 (Audio), MJ-65 (MIC Jack), AS-46 (Volume) Boards	4-65
	• KS-15 (Key SEG) Board	4-73
	• DV-19 (Video) Board	4-82
	• FU-123 (Fuse) Board/Power Block	4-112
3.	Semiconductor Lead Layouts	4-119

5. IC DESCRIPTION

	• Main Microcomputer (DV-19 Board IC730 : M37702M4)	5-1
	• I/O Expander (DV-19 board IC711 : CXD1095Q)	5-2
	• DA Converter (DV-19 board IC704 : M62352)	5-3
	• DA Converter (DV-19 board IC705 : M62352)	5-3
	• DA Converter (DV-19 board IC706 : M62352)	5-3
	• DA Converter (DV-19 board IC707 : M62352)	5-3
	• Master Microcomputer (CP-64 board IC500 : M37732S4AFP)	5-4
	• CPG, PTC, PIU, ICU (CP-64 board IC518 : CXD1500Q)	5-5
	• OSD Microprocessor (CP-64 board IC501 : CXP80P116Q-1)	5-6

6. EXPLODED VIEWS

1.	Main Section	6-1
2.	Keyboard Section	6-2
3.	Search Dial Section	6-3
4.	Fader Section	6-4
5.	Button Section	6-5

7. ELECTRICAL PARTS LIST

AM-32 Board	7-1
AS-46 Board	7-4
CP-64 Board	7-4
DP-46 Board	7-7
DV-19 Board	7-10
ED-41 Board	7-30
FU-123 Board	7-30
JS-25 Board	7-31
KS-15 Board	7-31

Section Title Page

KY-22 Board 7-35
MJ-65 Board 7-37
MM-27 Board 7-37
RE-25 Board 7-41
RS-62 Board 7-45
VI-126 Board 7-47
Power Block 7-51
HARDWARE LIST 7-54

8. ELECTRICAL ADJUSTMENTS

8-1. OUTLINE 8-1
8-2. PREPARING THE MEASURING EQUIPMENT ... 8-1
8-2-1. Measuring Equipment and Tools Neededes 8-1
8-2-2. Note on Measuring Equipment and Tools 8-2
8-3. CONNECTING THE MEASURING EQUIPMENT 8-2
8-4. SWITCHING THE INPUT SIGNAL 8-3
8-5. MANUAL ADJUSTMENT 8-3
8-5-1. DV-19 4fsc Adjustment 8-3
8-5-2. MM27A Write APC Adjustment 8-4
8-5-3. MM27B Write APC Adjustment 8-4
8-5-4. MM27A Write AFC Adjustment 8-4
8-5-5. MM27B Write AFC Adjustment 8-4
8-6. STARTING UP THE EVR CONTROL PROGRAM 8-4
8-7. EVR ADJUSTMENT 8-6
8-7-1. Fader A DC Level Adjustment 8-6
8-7-2. Fader B DC Level Adjustment 8-6
8-7-3. Sync Level Adjustment 8-6
8-7-4. Set Up Level Adjustment 8-7
8-7-5. Read A Y Level Adjustment 8-7
8-7-6. Read B Y Level Adjustment 8-8
8-7-7. Write A Y Level Adjustment 8-8
8-7-8. Write Y Level Balance Adjustment 8-9
8-7-9. Y/C SEP A Y Level Adjustment 8-9
8-7-10. Y/C SEP B Y Level Balance Adjustment 8-10
8-7-11. A HCENT Adjustment 8-10
8-7-12. B HCENT Balance Adjustment 8-11
8-7-13. Burst Level Adjustment 8-11
8-7-14. A White Balance Adjustment 8-12
8-7-15. B White Balance Adjustment 8-12
8-7-16. A Read Chroma Adjustment 8-13
8-7-17. B Read Chroma Adjustment 8-13
8-7-18. Soft Border Level Adjustment 8-14
8-7-19. Border Color Y/C Level Adjustment 8-14
8-8. ADJUSTMENT PARTS ARRANGEMENT DIAGRAM 8-16

Features

The FXE-100/100P video editing system combines the functions of a video switcher, an audio mixer and a precision editing controller capable of executing A/B roll edits. Unlike conventional editing controllers, it does not require complicated connections to external equipment to achieve special effects such as mosaic and chroma-key insertion. All functions are available from an easy-to-use control panel. Connecting a single monitor allows you to view signals from each source at every stage of the editing process, from preview to program recording.

Following is a description of the principal features of this unit.

Supports multiple signal formats

Compatible with various VCRs

Three RS-422 and RS-232C interfaces permit simultaneous control of up to three VCRs. There are I/O connectors for composite video and S-video, making it possible to connect VCRs using a variety of signal formats, such as Hi8 and S-VHS.

Two time code formats

In addition to CTL signals, SMPTE/EBU standard longitudinal time code (LTC) and 8 mm time code can be used to specify locations on source and master tapes.

Editing functions

Versatile editing modes

- **A/B roll:** Uses two player VCRs for transition effects such as mix and wipe.
- **Self A-roll:** Uses one player, but allows mixes and wipes using normal playbacks and playbacks with input effects.
- **A-roll:** Uses one player, but mixes and wipes can be carried out using freeze frame playback from the recorder.
- **Sync roll:** Two players are run in synchronization, allowing you to switch between their playback as often as desired.
- **Manual effects:** Manual control allows you to vary the speed and timing of special effects at will.
- **Split editing:** Audio tracks can be mixed up to a minute sooner or later than video tracks.
- **DMC (Dynamic Motion Control) editing:** Permits editing of noiseless, variable-speed playback when operating with players that support Dynamic Tracking® (DT).

Precise edit points and transition times

Edit points can be set while viewing playback on the monitor or entered manually from the numeric keypad. Transition times for effects such as wipes and dissolves can also be set by dedicated buttons on the control panel or entered manually. Transition times range from 0 to 999 frames, for very precise effects.

Edit decision list

Auto assembly

Data for up to 99 edits can be saved in an internal edit decision list, allowing you to revise individual edits at any time for later assembly into a complete program.

Control panel snapshots

The current settings of the buttons in the video switcher and special effects sections of the control panel can be saved in memory together with edits. The state of the control panel can be instantly restored at any time by recalling the snapshot data.

Input and output of edit data

The unit is equipped with an RS-232C interface for input and output of edit decision list and snapshot data. The data can be transferred to and from personal computers or other external equipment.

Video switcher and special effects

Digital processing for high-quality video

Stable, high-quality video through 4-fsc (FXE-100) or 910 fH (FXE-100P) sampling of input video signals, 8-bit quantizing, and 4:1:1 digital processing in the signal processing section.

Digital frame memory

Both of the unit's signal buses (A and B) are equipped with digital frame memory. An internal synchronizer controls output from frame memory, for precise synchronization of A-bus and B-bus signals. This makes it possible to use VCRs without time base correction (TBC) as input sources.

Sophisticated digital effects

- **Mix:** In addition to normal dissolves, you can select mixes which apply effects such as mosaic, posterization and monochrome during the transition.
- **Wipe:** A total of 135 geometrical wipe patterns are available, along with wipe modes such as slide and scroll. Frequently used patterns may be assigned to the two user-programmable keys in the wipe pattern section. Wipe patterns can be given borders of a selected width and color.
- **Luminance key, chroma key:** Titles can be inserted into the video using camera output.

Input effects

Digital effects such as freeze frame, multi-screen and strobe may be applied independently to input video on bus A and bus B. Many of the digital effects can be used in combination.

This section is extracted from FXE-100/FXE-100P instruction manual.

Features

Color correction
Color correction (white balance adjustment) can be carried out independently for A-bus and B-bus signals. Color correction parameters can be saved to memory and recalled when necessary.

Fade in/fade out
Fade in and fade out are available for use with black and white backgrounds.

Audio mixer

You can adjust the audio input level independently for each input signal, and adjust the level of audio output to the program recorder and monitor. You can also mix in audio from a microphone or auxiliary audio source for output as program audio.

Input/output channels

Video and audio input/output channels
As shown below, the unit features a rich variety of video and audio I/O channels.

Video input

Signal source	Signal format	
	S-video	Composite video
Player 1	1	1
Player 2	1	1
Recorder	1	1
Auxiliary source 1	1	1
Total	4	4

Video output

Output signal	Signal format	
	S-video	Composite video
Program signal 1	1	1
Program signal 2	1	1
Monitor signal	—	1
Total	2	3

Audio input

Signal source	Channels
Player 1	4
Player 2	4
Recorder	2
Auxiliary source 1	2
Auxiliary source 2	2
Microphone	1
Total	15

Audio output

Channels	Output signal
Program signal 1	2
Program signal 2	2
Monitor signal	2
Total	6

Switches on the connector panel can be used to select input and output signal impedance to match the impedance of connected equipment.

Black burst output
Signals from the internal black burst signal generator may be output from four output channels, to synchronize source equipment from this unit.

Control functions

In addition to three RS-422 interfaces and three RS-232C interfaces, the unit supports two GPI interfaces, allowing you to output status pulses at edit points in order to control external equipment, and to input timing pulses in order to control this unit.

Pinch-on delay measurement
Pinch-on delay (the time required for tape transport to start after a VCR receives a tape transport command) can be measured for up to three VCRs connected to this unit's RS-422 and RS-232C connectors. Measurement data is held in memory and used by the unit to adjust the timing of tape transport commands to the VCRs, for quick synchronization.

System setup menu

The system setup menu is displayed on the main monitor. It allows you to select operating modes and signal formats, and to configure the unit for use with various types of external equipment. Selections are made by rotating the search dial.

Optional accessories

The following cables are available for use with this unit.

RS-422 remote control cable
RCC-5G/10G/30G (9-pin, 5m/10m/30m): Connect RS-422 connectors on this unit to VCR RS-422 connectors.

RS-232C remote control cable
SMF-3036C null modem cable (9-pin/25-pin): Connect RS-232 connectors (D-sub 9-pin) and EDL IN/OUT connectors (D-sub 9-pin) on this unit to RS-232C connectors (D-sub 25-pin) on VCRs and external equipment.

XLR 3-pin ↔ phono-jack cross cable
Connect audio I/O connectors (phono-jack) on this unit to XLR 3-pin connectors on external equipment.
- RK-5XLRM (male, 5m)
- RK-5XLRF (female, 5m)

1-2

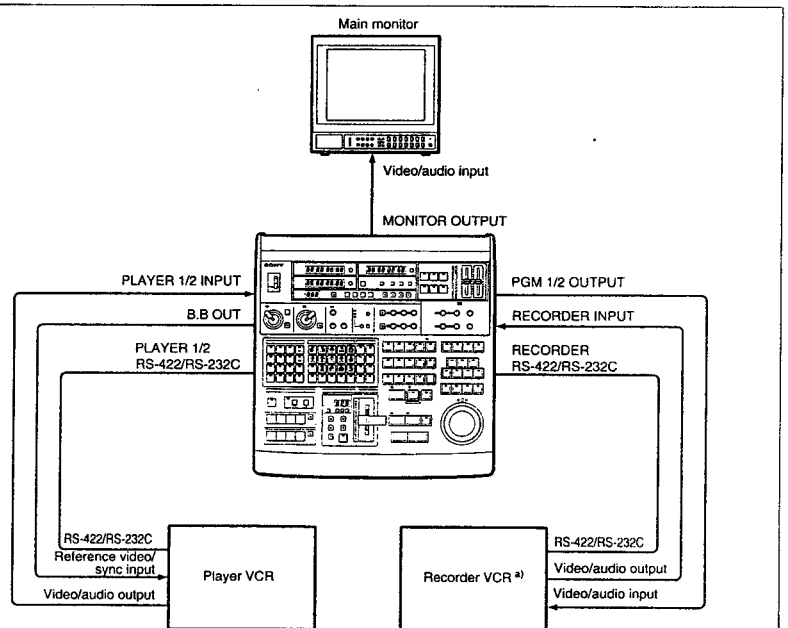
System Configuration Examples

This section presents three examples of editing systems which can be configured around this unit.
In the illustrations, connections between system components are illustrated by single lines, even if both audio and video cables are required. Arrows indicate the direction of the connection.

For more information, see "Connections" (page 3-3).

A-Roll and Cut Editing System

This example shows how to configure an editing system using only one player and one recorder.
In A-roll editing, freeze-frame playback from the recorder is read into bus B, allowing you to perform mix and wipe transitions with playback from the player VCR.

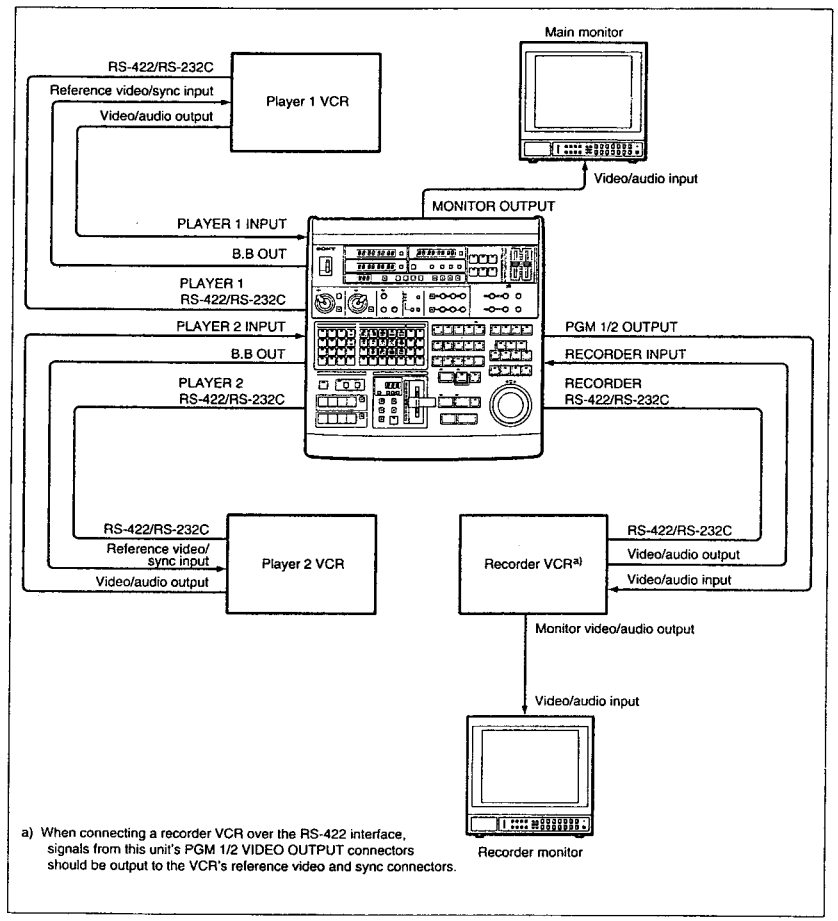


a) When connecting a recorder VCR over the RS-422 interface, signals from this unit's PGM 1/2 VIDEO OUTPUT connectors should be output to the VCR's reference video and sync connectors.

A-roll and cut editing system

A/B Roll Editing System (1)

This example shows how to configure an A/B roll editing system for mix and wipe transitions between playback from two players.

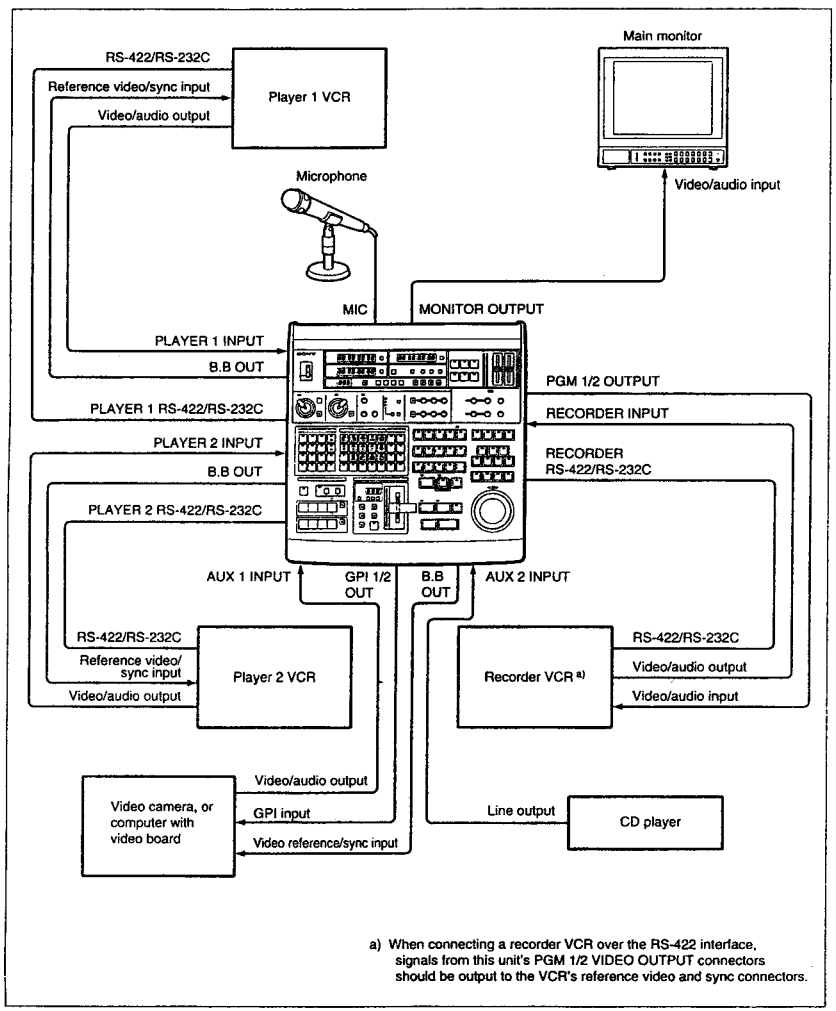


a) When connecting a recorder VCR over the RS-422 interface, signals from this unit's PGM 1/2 VIDEO OUTPUT connectors should be output to the VCR's reference video and sync connectors.

A/B roll editing system (1)

A/B Roll Editing System (2)

This example shows how to configure an A/B roll editing system with equipment to insert titles, narration and background music.

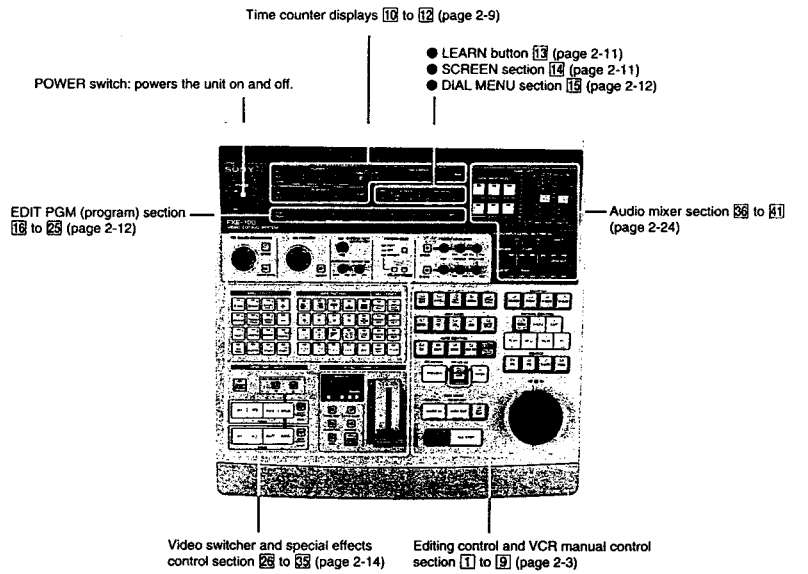


a) When connecting a recorder VCR over the RS-422 interface, signals from this unit's PGM 1/2 VIDEO OUTPUT connectors should be output to the VCR's reference video and sync connectors.

A/B roll editing system (2)

Control Panel

The following figure shows the top-level grouping of controls on the control panel.

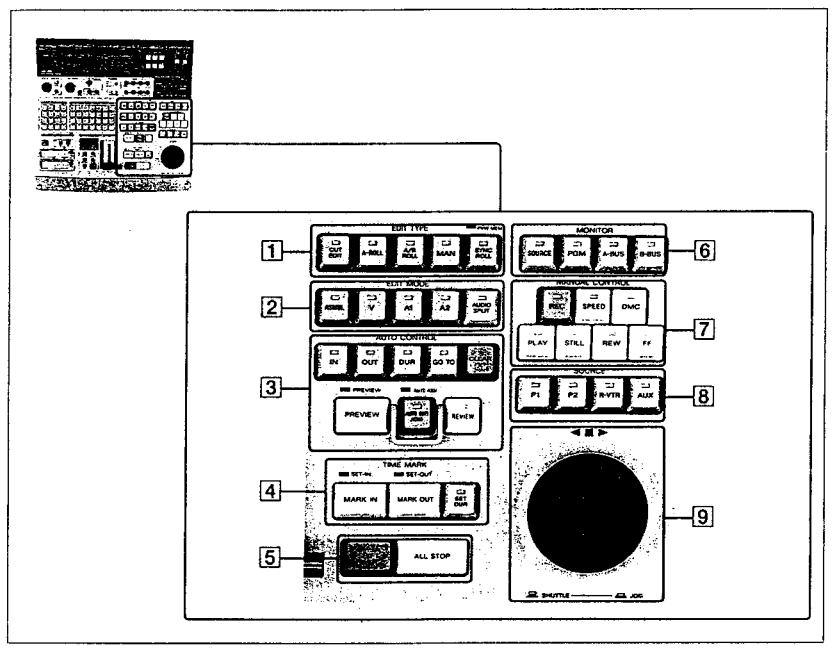


- Numbers enclosed in squares show functional sub-groups below the top-level groupings. For example, the audio mixer group contains six functional sub-groups, numbered 36 to 41.
- See the page numbers in parentheses for detailed descriptions of each control in the top-level groups.

Control panel

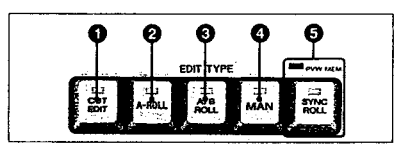
Editing Control and VCR Manual Control Section

This section includes controls for selecting the edit mode, setting edit points, and manual VCR control.



Editing control and VCR manual control section

1 EDIT TYPE section



This section includes controls for selecting the type of edit to be performed for each of the connected sources.

❶ CUT EDIT button
Press this button, turning it on, to carry out a cut edit.

❷ A-ROLL button
Press this button, turning it on, to insert effects such as wipes and mixes when editing with one recorder and one player.

❸ A/B ROLL button
Press this button, turning it on, to carry out A/B roll editing using two players and a recorder.

❹ MAN (manual) button
Press this button, turning it on, for manual control of wipes and dissolves.

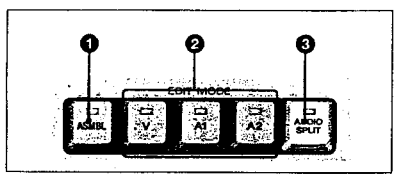
❺ SYNC ROLL (MEM CLR) button and PVW MEM indicator

SYNC ROLL: Press this button, turning it on, for sync roll editing (editing on the fly).

MEM CLR (memory clear) (= SHIFT + SYNC ROLL): After previewing an edit in sync roll mode, press this button to delete the data for that edit from memory.

PVW MEM (preview memory) indicator: In sync roll mode, this indicator lights when the data for an edit which has been previewed is present in memory.

2 EDIT MODE selection section



❶ ASMBL (1ST EDIT) button

ASMBL (assemble): To select assemble mode, press this button, turning it on. If any of the insert mode buttons ❷ are lit, press them until they are all flashing before pressing this button.

1ST EDIT (= SHIFT + ASMBL): To select first edit mode, press this button, it starts flashing. If any of the insert mode buttons ❷ are lit, press them until they are all flashing before pressing this button.

❷ Insert mode buttons (V, A1 and A2 (TC))

To select a signal to be used in insert mode, press the corresponding button, turning it on. More than one button may be lit.

V button: Video signal

A1 button: Audio channel 1

A2 (TC) button:

A2: Audio channel 2

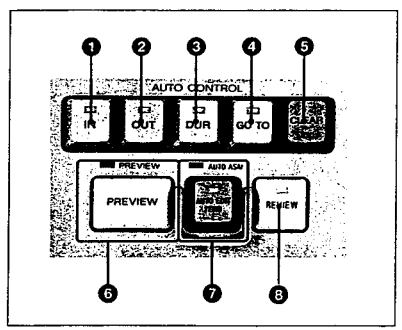
TC (= SHIFT + A2): Time code. Press this button so that it starts flashing to carry out time code insert editing.

❸ AUDIO SPLIT (SPLIT) button

AUDIO SPLIT: Press this button so that it starts flashing to split the audio and video IN points of the player or recorder.

SPLIT (= SHIFT + AUDIO SPLIT): In split editing, to check the player or recorder split offset, press this button, turning it on. The split offset will appear in the corresponding time counter display in seconds : frames format.

3 AUTO CONTROL section



This section includes the controls for setting, revising and confirming edit points, and for executing and reviewing automatic edits.

❶ IN (TRIM –) button

IN: Press this button to display the IN point of the VCR selected in the SOURCE section 8. The button lights, and the IN point is displayed in the corresponding time counter display 10, 11 or 12.

TRIM – (= SHIFT + IN): Press this button for fine adjustment of the time code value appearing in the time counter display of the selected VCR. Each time the button is pressed, the value is decremented by one frame.

❷ OUT (TRIM +) button

OUT: Press this button to display the OUT point of the VCR selected in the SOURCE section 8. The button lights, and the OUT point is displayed in the corresponding time counter display.

TRIM + (= SHIFT + OUT): Press this button for fine adjustment of the time code value appearing in the time counter display of the selected VCR. Each time the button is pressed, the value is incremented by one frame.

❸ DUR (LAST X) button

DUR (duration): Press this button to display the duration value for the selected VCR. The button lights, and the duration (hours:minutes:seconds:frames) appears in the corresponding time counter display.

LAST X (= SHIFT + DUR): Press this button to undo the effect of a correction to a time code value or to restore a time code value cleared by the CLEAR button.

❹ GO TO (LAST ED) button

GO TO: To cue up the IN point or OUT point on the selected VCR, press the IN button ❶ or OUT button ❷ as appropriate, followed by this button.

LAST ED (edit) (= SHIFT + GO TO): After previewing and revising an edit, and previewing the edit again, press this button to return to the state before the revisions.

❺ CLEAR (TOTAL) button

CLEAR: To delete the IN point, OUT point, or duration setting for the selected VCR, press the IN button ❶, OUT button ❷ or DUR button ❸ as appropriate, followed by this button.

Additionally, press this button to exit from numeric keypad mode.

For more information about numeric keypad mode, see the descriptions of the TIME MARK buttons 4.

TOTAL (= SHIFT + CLEAR): Press this button to check the total duration of the edits carried out. The total is displayed in the RECORDER time counter display.

❻ PREVIEW button and PREVIEW indicator

After completing the settings for an edit, press this button to preview the edit before execution. The indicator lights and a preview begins, allowing you to check both video and audio on the monitor, from the preroll point to the postroll point.

❼ AUTO EDIT/END (AUTO ASM) button and AUTO ASM indicator

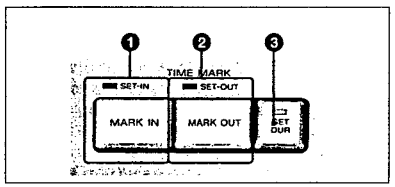
AUTO EDIT/END: Press this button, turning it on, to execute an automatic edit. Press it again after beginning an automatic edit to end the edit.

AUTO ASM (assemble) (= SHIFT + AUTO EDIT/END): Press this button to carry out continuous automatic recording. The AUTO ASM indicator lights, and continuous editing begins from an arbitrary edit stored in the edit decision list.

❽ REVIEW button

Press this button, turning it on, to review the results of an edit. The tape on the recorder is played back from the preroll point to the postroll point.

4 TIME MARK section



❶ MARK IN (SET IN) button and SET IN indicator

MARK IN: Press this button to set an IN point while watching the playback of the VCR selected in the SOURCE section 8.

SET IN (= SHIFT + MARK IN): Press this button, turning the SET IN indicator on, to enter an IN point value using the numeric keypad 30.

❷ MARK OUT (SET OUT) button and SET OUT indicator

MARK OUT: Press this button to set an OUT point while watching the playback of the VCR selected in the SOURCE section 8.

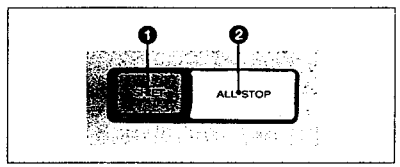
SET OUT (= SHIFT + MARK OUT): Press this button, turning the SET OUT indicator on, to enter an OUT point value using the numeric keypad 30.

❸ SET DUR (SET TRANS) button

SET DUR (duration): Press this button to enter a duration value using the numeric keypad 30.

SET TRANS (transition) (= SHIFT + SET DUR): Press this button to enter an effect transition time using the numeric keypad 30.

5 SHIFT button and ALL STOP button



❶ SHIFT button

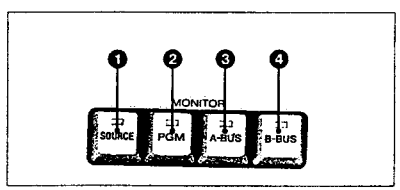
When this button is held down, each of the buttons in the editing control and VCR manual control section has the effect indicated on the front side of the button.

For details see the descriptions of the individual buttons.

❷ ALL STOP button

Press this button to stop all of the VCRs connected to the PLAYER 1 and 2 RS-422/RS-232C connectors and the RECORDER RS-422/RS-232C connectors.

6 MONITOR section



The buttons in this section select signals for output to the main monitor, connected to the MONITOR OUTPUT connectors on the connector panel. When you press them, the buttons light to indicate the selected signals.

❶ SOURCE button

Selects the source signals specified in the SOURCE section 8.

❷ PGM (program) button

Selects the program signals. Editing and special effects signals are output to the main monitor as well as to the recorder and the program monitor connected to the PGM 1/2 OUTPUT connectors.

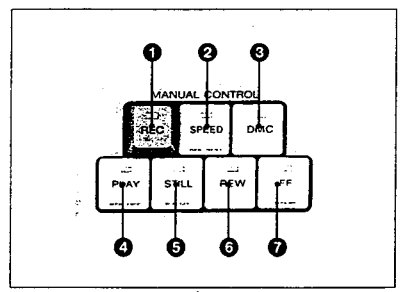
❸ A-BUS button

Selects the audio and video on the A bus. Bus signals are output directly, without passing through frame memory.

❹ B-BUS button

Selects the audio and video on the B bus. Bus signals are output directly, without passing through frame memory.

7 MANUAL CONTROL section



The buttons in this section provide manual control of the VCRs connected to the PLAYER 1 and 2 RS-422/RS-232C connectors and the RECORDER RS-422/RS-232C connectors.

❶ REC (record) button

To record the output signals from the PGM 1/2 OUTPUT connectors without making any editing settings, hold down this button and press the PLAY button, turning both buttons on.

❷ SPEED (MK-SPD) button

SPEED: In DMC (dynamic motion control) editing, press this button to check the initial playback speed set with the MK-SPD (= SHIFT + SPEED) button. The button lights, and the dynamic tracking playback speed is shown in the time counter display as a percentage of normal playback speed.

MK-SPD (mark speed) (= SHIFT + SPEED): Use this button to set the initial playback speed for DMC (dynamic motion control) editing.

❸ DMC button

Press this button, turning it on, to carry out variable-speed playback on a player which supports dynamic tracking, or to control the playback speed during DMC editing.

❹ PLAY (STB OFF) button

PLAY: To start playback, press this button, turning it on.

STB (standby) OFF (= SHIFT + PLAY): Press this button to switch the VCRs out of standby mode, so that the tapes do not remain wound on the head drums. Use this function to protect the tapes and heads when taking an appreciable break in the editing process.

❺ STILL (EJECT) button

STILL: Press this button, turning it on, to get a still picture during playback.

EJECT (= SHIFT + STILL): Press this button to eject the cassette from a VCR.

❻ REW (rewind) button

Press this button, turning it on, to rewind the tape.

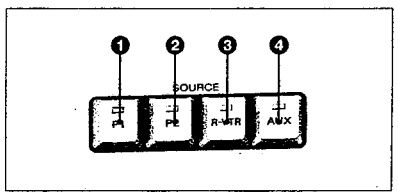
❼ FF (STOP) button

FF (fast forward): Press this button, turning it on, to fast forward the tape.

STOP (= SHIFT + FF): Press this button to stop the tape.

8 SOURCE section

The buttons in this section select the VCRs controlled from this unit, the source affected by edit point operations, and the source signals which are sent to the MONITOR OUTPUT connectors. When you press them, the buttons light to indicate the selected source.



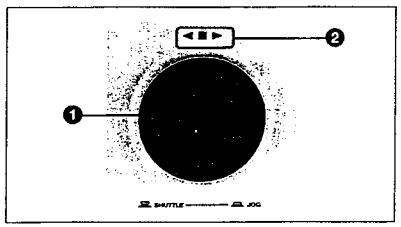
❶ P1 (player 1) button
- Selects player 1 for control from this unit.
- Selects player 1 as the source for the monitor signal.

❷ P2 (player 2) button
- Selects player 2 for control from this unit.
- Selects player 2 as the source for the monitor signal.

❸ R-VTR (recorder) button
- Selects the recorder for control from this unit.
- Selects the recorder as the source for the monitor signal.

❹ AUX (auxiliary) button
Selects auxiliary source 1 as the source for the monitor signal.

9 Search dial and playback direction indicators

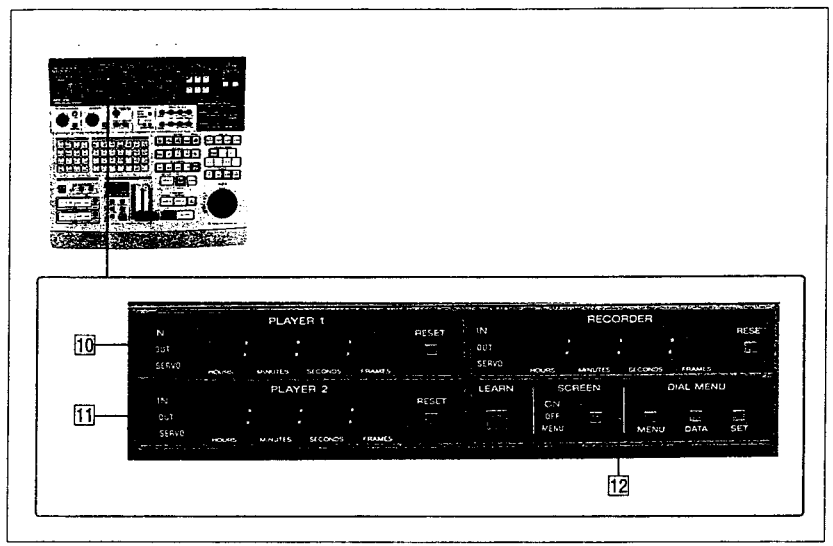


❶ Search dial
The search dial is used for two purposes.
- It acts as a combined shuttle and jog control, for controlling variable-speed playback and searching for edit points.
- It is used to select menu items and set parameters in the setup menu.

❷ Playback direction indicators
These indicators light to show the status or direction of playback.
□ : Lights during still playback.
▷: Lights during forward playback.
◁: Lights during reverse playback.

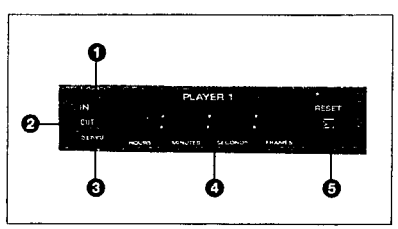
Time Counter Displays

These display time code values for each of the VCRs: player 1, player 2 and the recorder.



Time counter display panels

10 PLAYER 1 time counter display panel



❶ IN indicator
Lights when an IN point appears in the PLAYER 1 time counter display ❹. If the player 1 IN point is not set, this indicator flashes and "-- -- -- --" appears in the time counter display.

❷ OUT indicator
Lights when an OUT point appears in the PLAYER 1 time counter display ❹. If the player 1 OUT point is not set, this indicator flashes and "-- -- -- --" appears in the time counter display.

❸ SERVO indicator
Lights when the drum and capstan servos of player 1 are locked.

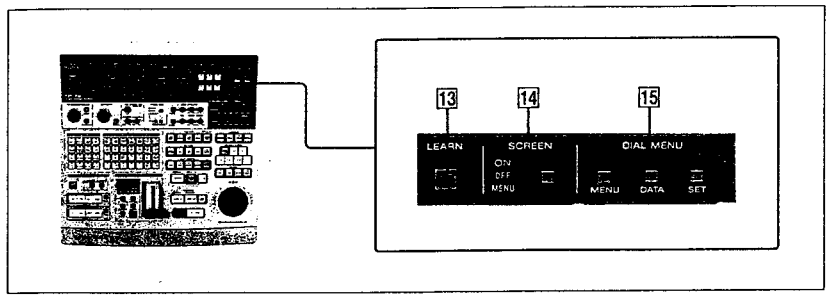
❹ PLAYER 1 time counter display
Displays time codes showing the tape position, an edit point position, tape speed during variable-speed playback, and other information relating to player 1. Also displays error codes to signal misoperations or improper settings.

❺ RESET button
When the CTL count is displayed in the time counter display, pressing this button resets it to "0:00:00:00".

11 PLAYER 2 time counter display panel
This panel has functions for player 2 corresponding to those in the PLAYER 1 time counter display panel 10.

12 RECORDER time counter display panel
This panel has functions for the recorder corresponding to those in the PLAYER 1 time counter display panel 10.
It is also used to display the following data.
- The duration for the auxiliary source connected to the AUX 1 INPUT connector on the connector panel, or values input for auxiliary source 1 with the numeric keypad.
- The total duration for the edits carried out.

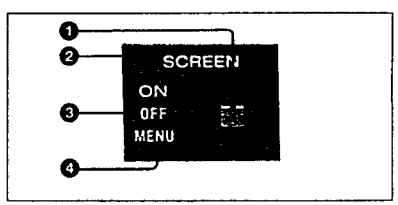
LEARN Button, SCREEN Section and DIAL MENU Section



LEARN button, SCREEN section and DIAL MENU section

13 LEARN button
Pressing this button automatically measures, for each of the VCRs connected to the PLAYER 1 and 2 RS-422/RS-232C connectors and the RECORDER RS-422/RS-232C connectors, the time required for tape transport to begin after a tape transport command is received (the pinch-on delay). These values are held in memory and used by the system to control tape transport operations, for quick synchronization of the VCRs.

14 SCREEN section



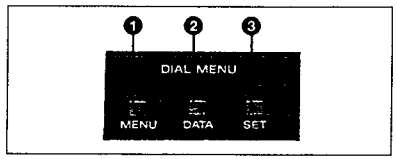
❶ SCREEN button
This button selects whether or not the monitor screen displays status information and setup menu items.
Pressing this button cycles through the three possibilities indicated by the ON ❷, OFF ❸, and MENU ❹ indicators.

❷ ON indicator
When this indicator is lit, the monitor display includes status information.

❸ OFF indicator
When this indicator is lit, the monitor does not display status or menu information.

❹ MENU indicator
When this indicator is lit, the monitor display includes setup menu information, and the setup menu can be controlled using the DIAL MENU buttons 15 and the jog-mode (depressed) search dial.

15 DIAL MENU section



The buttons in this section are used for menu operations.

For details, see Chapter 8.

❶ MENU button
To change the menu item displayed on the main monitor, hold this button down and rotate the search dial in jog mode.

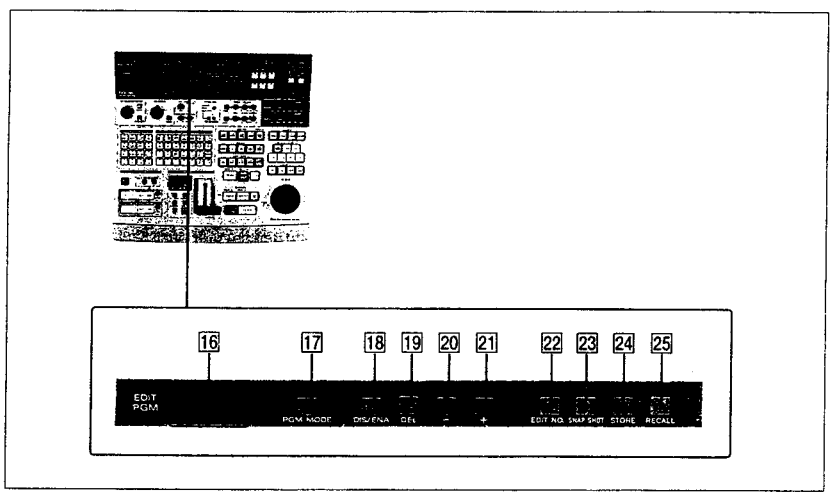
❷ DATA button
To change the setting of the currently displayed menu item, hold this button down and rotate the search dial in jog mode.

❸ SET button
Pressing this button confirms the flashing value on the screen as the new value of a setting, and saves it in memory.

EDIT PGM (Program) Section

Use the buttons in this section to control the edit program.

For details, see Chapter 7.



EDIT PGM section

16 Edit number display
Displays the current edit number.

17 PGM (program) MODE button
Press this button, turning it on, to start the edit control program.

18 DIS/ENA (disable/enable) button
Press to skip an edit that will not be needed during auto assembly recording.

19 DEL (delete) button
To delete an unneeded edit from memory, select the edit, then press this button.

20 '–' button
Press this button to select the edit immediately before the current edit. Each press of the button decrements the number appearing in the edit number display 16. Pressing the button when 001 is displayed cycles round to edit number 099. Pressing this button together with the SHIFT button decrements the number in the edit number display by 10.

21 '+' button
Press this button to select the edit immediately after the current edit.
Pressing this button together with the SHIFT button increments the number in the edit number display by 10.

22 EDIT NO. button
Press this button, turning it on, to register an edit in memory, recall it, or transfer it to or from an external device. The edit will be registered automatically when you execute the edit.

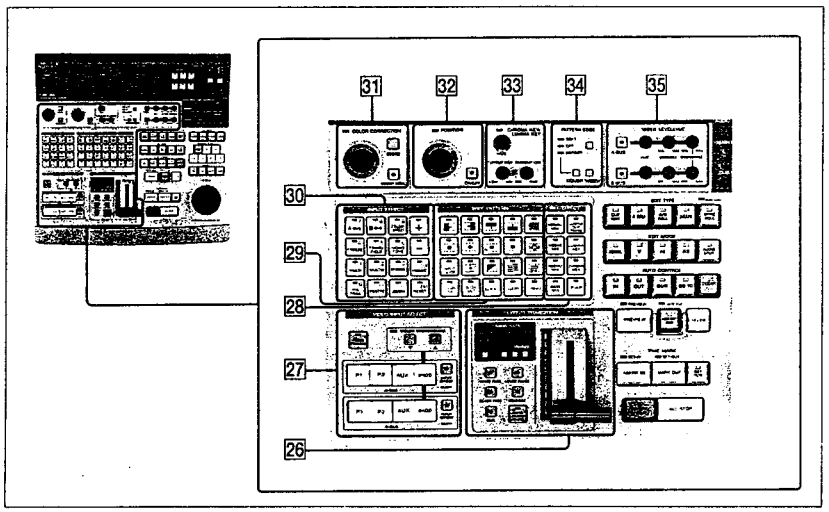
23 SNAPSHOT button
Pressing this button toggles it between lit and off. Lighting this button makes it possible to save a snapshot in memory, recall it, or transfer it to an external device. When it is lit, the control panel settings for effects will be saved to memory when you execute an edit.

24 STORE button
After setting edit data or snapshot data, or making changes to data, press this button to save the data in memory without executing an edit. The button lights and the edit number of the following edit appears in the edit number display 16.
However
- Edit data is not saved if the EDIT NO. button 22 is off.
- Snapshot data is not saved if the SNAPSHOT button 23 is off.

25 RECALL button
Press this button to recall edit or snapshot data. Use the '–' button 20 or '+' button 21 to select the edit, then press this button, turning it on. The control panel settings immediately change to the settings for the recalled edit.
However
- Edit data is not recalled if the EDIT NO. button 22 is off.
- Snapshot data is not recalled if the SNAPSHOT button 23 is off.

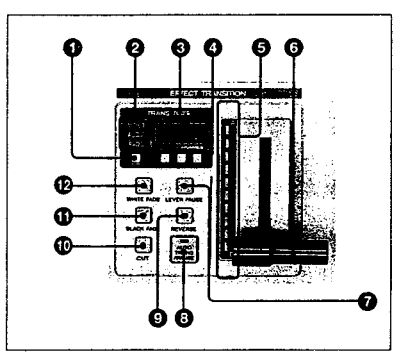
Video Switcher and Special Effects Control Section

This block of controls provides selection and control of video input signals, and various special effects.



Video switcher and special effects control section

26 EFFECT TRANSITION section



Use the controls in this section to execute transitions, and set the transition time.

❶ VIDEO/AUDIO/FADE button

Press this button to toggle the VIDEO, AUDIO, and FADE indicators on and off.

- If the AUDIO SPLIT button in the EDIT MODE section 2 is flashing (that is, if you are conducting a split edit), pressing this button lights one of the VIDEO, AUDIO, and FADE indicators, turning the others off.
- If the AUDIO SPLIT button is off, pressing this button toggles the VIDEO and AUDIO indicators together, turning the FADE indicator on or off.

❷ VIDEO, AUDIO, and FADE indicators

Press the VIDEO/AUDIO/FADE button to toggle these indicators on and off.

VIDEO/AUDIO: If you perform an operation which sets the transition time when both of these indicators are lit, the same transition time is set for both video and audio. Transition times for video only or audio only can be set only when the AUDIO SPLIT button in the EDIT MODE section is flashing.

FADE: When this indicator is lit, an effect transition time can be set for fade in/fade out.

Note

When the VIDEO and AUDIO indicators are both lit, independent transition times cannot be set for video and audio.

❸ TRANS RATE display

Displays the transition time in frames, as set by the three TRANS RATE buttons ❹ below.

❹ TRANS RATE buttons

Use these three buttons to set the transition time in frames (range: 0 to 999 frames).
Pressing one of these buttons increments the corresponding digit of the TRANS RATE display. Pressing it while holding down the SHIFT button 5 decrements the value.
The factory default setting for the transition time is 30 frames (FXE-100) or 25 frames (FXE-100P).

❺ Transition indicators

These show the progress of a transition. As the transition proceeds, progressively more of the indicators light. For example, when a transition from bus A to bus B is completed, only one indicator at the B-bus end is lit. When more than one indicator is lit, the video output is a combination of A-bus and B-bus signals.

❻ Fader lever

Use for manual control of a wipe or dissolve. The transition begins when you start to move the lever from one extremity, and ends when the lever reaches the opposite position. While the lever is in an intermediate position, the output is a combination of A-bus and B-bus signals.

The fader lever is disabled when the AUTO TRANS/PAUSE button ❽ is lit.

❼ LEVER PAUSE button

In auto transition mode, press this button to pause a wipe or dissolve at the position of the fader lever. The button lights. When the transition reaches the state represented by the position of the lever, this button begins to flash and the transition pauses. To continue the transition, either press the AUTO TRANS/PAUSE button ❽ or move the fader lever. Moving the fader lever takes the unit out of auto transition mode and puts it into manual transition mode.

❽ AUTO TRANS (transition)/PAUSE button

Pressing this button, turning it on, then pressing it once more executes an automatic transition using the transition time specified for a wipe or dissolve.
If you press this button while an auto transition is in progress, the transition is paused, and the button changes from lit to flashing. Pressing it again resumes the transition, and the button lights again. If you resume the transition by moving the fader lever, the unit leaves auto transition mode and enters manual transition mode.

❾ REVERSE button

When a wipe, luminance key or luminance clip transition is being used, pressing this button provides one of the following effects.

- For a wipe, the direction of movement of the wipe pattern is reversed.
- When the luminance key is selected, portions of the video outside of the specified luminance range are removed, instead of portions inside the range.
- For a luminance clip transition, the keying sequence from dim portions to bright portions is reversed, to key from bright portions to dim portions.

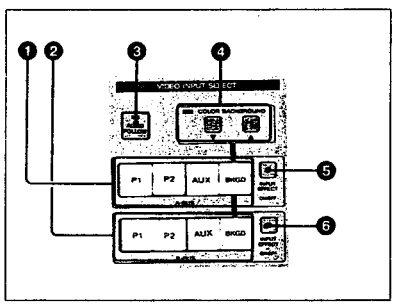
❿ CUT button

Press this button, turning it on, to switch instantaneously between A-bus video and B-bus video.

⓫ BLACK FADE button
Press this button, turning it on, to fade in from black, or to fade out to black.

⓬ WHITE FADE button
Press this button, turning it on, to fade in from white, or to fade out to white.

27 VIDEO INPUT SELECT section



❶ A-BUS video input selection buttons
To select a video source for bus A, press one of these buttons, lighting it either red or orange. When the button lights red, it means that the corresponding video signal is currently being output from the PGM 1/2 OUTPUT connectors. A button lit orange indicates that the source is selected, but is not currently being output. If the button is flashing, it means that there is no video input for the corresponding input connector (the monitor shows a grey background).
The buttons select sources as follows.

P1 button: Player 1 (the VCR connected to the PLAYER 1 INPUT connectors)
P2 button: Player 2 (the VCR connected to the PLAYER 2 INPUT connectors)
AUX button: Auxiliary source 1 (the video/audio device connected to the AUX 1 INPUT connectors)

BKGD button: The output from the internal color background generator. This button takes precedence over the other A-bus video input selection buttons. When this button is lit red, even if another button is also lit red, the output from the PGM 1/2 OUTPUT connector is the color background. To select one of the other buttons, press the BKGD button, turning it off.

❷ B-BUS video input selection buttons
Use these buttons to select a video source for bus B. However, during execution of an edit while the A-ROLL button in the EDIT TYPE section 1 is lit, these buttons go out and stay off even if pressed.

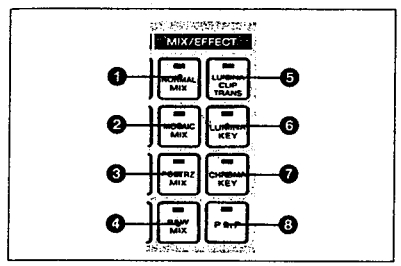
❸ AUDIO FOLLOW button
When this button is lit, selecting a video source as input to a bus automatically selects the same source for the audio input. In this case, when you carry out a wipe or dissolve, the audio signals change together with the video signals. To select the audio source independently from the video source, press this button, turning it off, then select the audio source using the appropriate button in the AUDIO INPUT SELECT section 36.

❹ Background color selection buttons (▼/▲) and COLOR BACKGROUND indicator
When the BKGD button in the video input selection buttons ❶ and ❷ for either of the buses is lit, the COLOR BACKGROUND indicator also lights. In this state, pressing the ▼ or ▲ button cycles through the available selection of 25 background colors for bus A or bus B.

❺ A-BUS INPUT EFFECT ON/OFF button
When this button is lit, the effect selected in the INPUT EFFECT section 30 is applied to bus A.

❻ B-BUS INPUT EFFECT ON/OFF button
When this button is lit, the effect selected in the INPUT EFFECT section 30 is applied to bus B.

28 MIX/EFFECT selection section



These buttons select the type of mix or key effect used to combine the video signals on the A and B buses. To make the selection, press the desired button, turning it on.

For details, see "Dissolve" (page 5-26) and "Key" (page 5-41).

❶ NORMAL MIX button
Provides a simple mix of the two signals, so that a transition from bus A to bus B is a dissolve.

❷ MOSAIC MIX button
Provides a dissolve in which the video becomes a progressively coarser mosaic to the mid-point of the transition, then returns progressively to normal.

❸ POSTRZ (posterization) MIX button
Provides a dissolve which simplifies the luminance of the video signal. The luminance cycles through the steps 16→8→4→8→16.

❹ B&W (black and white) MIX button
Provides a dissolve in which the video is changed progressively to monochrome to the mid-point of the transition, then returns progressively to normal.

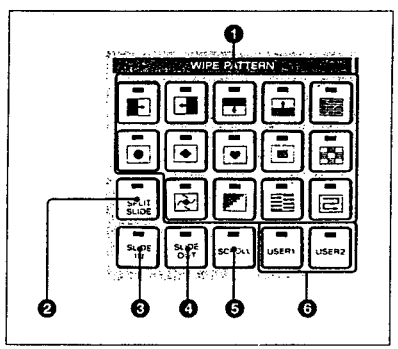
❺ LUMINA (luminance) CLIP TRANS (transition) button
Provides one type of luminance key. As the transition proceeds, portions of the old video of progressively increasing brightness are replaced by the new video.

❻ LUMINA (luminance) KEY button
Portions of B-bus video whose luminance (brightness) is equal to or higher than a specified reference level are replaced by A-bus video. The reference luminance level is specified using the controls in the CHROMA KEY/LUMINA KEY section 33.

❼ CHROMA KEY button
Portions of B-bus video of a specified hue are replaced by A-bus video. The reference hue is specified using the controls in the CHROMA KEY/LUMINA KEY section 33.

❽ P IN P (picture-in-picture) button
A small copy of the B-bus video is inserted in the A-bus video. The position of the insert picture can be controlled by the joystick in the POSITION section 32.

29 WIPE PATTERN selection section



The buttons in this section select the pattern to be used in a wipe effect. To make the selection, press the desired button, turning it on.

For details, see "Wipe" (page 5-29).

1-12

The following descriptions of buttons ❶ to ❺ assume you are making the transition from bus A to bus B.

❶ Buttons with symbols and arrows

- The symbol on the button represents the pattern with which the two video images are combined at an intermediate stage of the transition. The white portion corresponds to A-bus video, and the blue portion to B-bus video.
- The arrows show the direction of the wipe pattern.
- For the button [8] the video on the B bus rotates clockwise as the wipe proceeds.

❷ SPLIT SLIDE button

The B-bus video slides in over A-bus video in the form of stripes. When the stripes reach the far side of the screen, the remaining stripes of A-bus video begin to slide off, finally leaving only B-bus video.
The vertical or horizontal direction of the B-bus video slide can be selected with the [8] [8] [8] [8] wipe buttons.

❸ SLIDE IN button

The B-bus video slides in over A-bus video. The vertical or horizontal direction of the B-bus video slide can be selected with the [8] [8] [8] [8] wipe buttons. If the [8] and [8] buttons are both lit, the slide direction changes to a slant.

❹ SLIDE OUT button

The A-bus video slides out, revealing the B-bus video. The vertical or horizontal direction of the A-bus video slide can be selected with the [8] [8] [8] [8] wipe buttons.

❺ SCROLL button

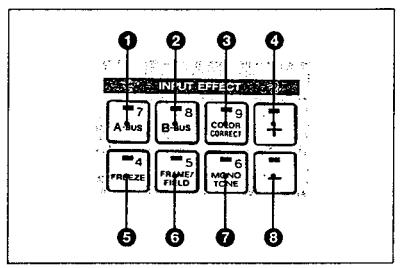
The B-bus video slides in, as A-bus video slides out. The vertical or horizontal direction can be selected with the [8] [8] [8] [8] wipe buttons.

❻ USER 1 and USER 2 buttons

Frequently used wipe patterns and settings can be assigned to these buttons, using item 201 WIPE PATTERN in the setup menu.

For details, see Chapter 8.

[30] INPUT EFFECT section (numeric keypad)



The buttons in this section select the digital effect applied to a bus when one of the A-BUS/B-BUS INPUT EFFECT ON/OFF buttons in the VIDEO INPUT SELECT section [27] is lit. You can press more than one of these buttons for combination effects.
The buttons of the INPUT EFFECT section [30] also double as a numeric keypad for entering time code and duration values.

❶ A-BUS button / 7 key

Press this button, turning it on, to apply the input effect to bus A.

❷ B-BUS button / 8 key

Press this button, turning it on, to apply the input effect to bus B.

Note

When setup menu item 306 INPUT EFFECT SELECT is set to ON, the input effect is applied automatically to the bus selected by the fader lever position.

For details, see Chapter 8.

❸ COLOR CORRECT button / 9 key

- Press this button, turning it on, to enable the controls in the COLOR CORRECTION section [31].
- To return color correction to its original state, either press this button once more, turning it off, or press the RESET button ⓰, turning it on.

❹ '+' key

This button is used together with other buttons in the INPUT EFFECT section to control effect selection.

For details, see the descriptions of the other buttons in this section.

❺ FREEZE button / 4 key

- To freeze the video, press this button, turning it on.
- To return to normal video, either press this button once more, turning it off, or press the RESET button ⓰, turning it on.

❻ FRAME/FIELD button / 5 key

- When the FREEZE button ❺ is lit, this button lights automatically. When it is lit, the freeze operation captures a single field. Press this button, turning it off, to capture a whole frame (two fields) instead. A single-field freeze capture may result in less blurring if there is rapid motion in the picture.
- This button also lights automatically when the MULTI ❾, MOSAIC ⓬ and ZOOM ⓯ buttons are lit. But in these cases pressing it has no effect.

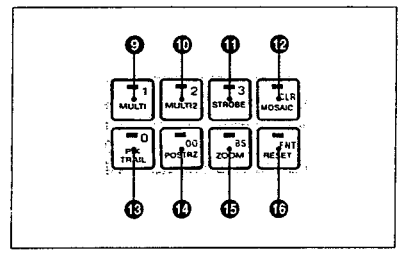
❼ MONOTONE button / 6 key

- Press this button, turning it on, to obtain a monotone (monochrome) picture. When this button is lit, pressing the COLOR CORRECT button ❸, turning it on, allows you to use the COLOR CORRECTION section [31] to adjust the monochrome tint, and save and recall it in memory.
- To return to the original color state, either press this button once more, turning it off, or press the RESET button ⓰, turning it on.

❽ '–' key

This button is used together with other buttons in the INPUT EFFECT section to control effect selection.

For details, see the descriptions of the other buttons in this section.



❾ MULTI button / 1 key

When you press this button, turning it on, the screen is split into a 3 by 3 grid, and a reduced copy of the video appears in the top left corner. Unless you applied this effect to a freeze frame, the video continues to move. You can now paste successive copies of freeze frames in the nine boxes, as follows. When you press the '+' key, the picture in the top left corner freezes, and the current video is shown in the top center box. Press it again, and this box freezes, and the current video moves to the upper right corner, and so on.
The '–' key has the same effect, except that the boxes are pasted in the reverse direction.

For details, see "Multiple screens" (page 5-46).

To return to normal video, either press this button once more, turning it off, or press the RESET button ⓰, turning it on.

❿ MULTI 2 button / 2 key

This button provides the same effect as the MULTI button ❾, except that the order in which the nine boxes are pasted is different.

For details, see "Multiple screens" (page 5-46).

To return to normal video, either press this button once more, turning it off, or press the RESET button ⓰, turning it on.

⓫ STROBE button / 3 key
Pressing this button, turning it on, freezes the video at a specified frame interval, giving a stroboscopic effect. You can adjust the frame interval using the '+' key ❹ and '–' key ❸.
To return to normal video, either press this button once more, turning it off, or press the RESET button ⓰, turning it on.

⓬ MOSAIC button / CLR (clear) key
- Pressing this button, turning it on, applies a mosaic grid to the picture. You can adjust the coarseness of the mosaic using the '+' key ❹ and '–' key ❸.
  To return to normal video, either press this button once more, turning it off, or press the RESET button ⓰, turning it on.
- In numeric keypad mode, press this key before pressing the ENT key ⓮ to clear a numerical value.

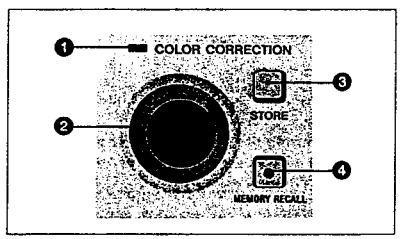
⓭ PIX TRAIL button / 0 key
Pressing this button, turning it on, produces an image trail of a certain length.
To return to normal video, either press this button once more, turning it off, or press the RESET button ⓰, turning it on.

⓮ POSTRZ (posterization) button / 00 key
- Pressing this button, turning it on, breaks the luminance down into a limited number of levels, producing a poster effect. You can select 16, 8 or 4 levels.
  To return to normal video, either press this button once more, turning it off, or press the RESET button ⓰, turning it on.
- Pressing this key in numeric keypad mode enters "00".

⓯ ZOOM button / BS (backspace) key
- Pressing this button, turning it on, provides a zoom function. Press the '+' key to expand the picture, and the '–' key to contract it.
  To return to normal video, either press this button once more, turning it off, or press the RESET button ⓰, turning it on.
- In numeric keypad mode, press this key before pressing the ENT key ⓮ to clear the most recently entered digit.

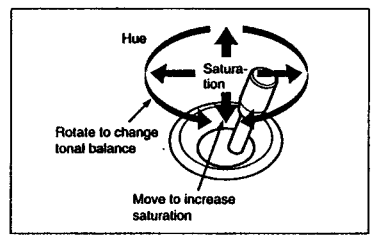
⓰ RESET button / ENT (enter) key
- When you press any of the other buttons in the INPUT EFFECT section, except for the A-BUS button ❶ and B-BUS button ❷, this button automatically goes off.
  Pressing this button, turning it on, turns off all the other buttons in the INPUT EFFECT section, and cancels their effect selections.
- In numeric keypad mode, pressing this key confirms the value entered and takes the unit out of numeric keypad mode.

31 COLOR CORRECTION section



❶ COLOR CORRECTION indicator
When you press the COLOR CORRECT button in the INPUT EFFECT section 30, turning it on, this indicator lights to inform you that it is possible to carry out color correction. Color correction is applied to the bus selected with the A-BUS and B-BUS buttons in the INPUT EFFECT section.

❷ COLOR CORRECTION joystick
When the COLOR CORRECTION indicator ❶ is lit, moving this joystick carries out the color correction. Rotating the stick cycles through all possible hues. Moving it further from the center position increases the color saturation.



Using the COLOR CORRECTION joystick

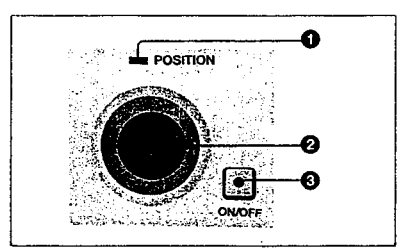
The correction range can be specified using item 205 COLOR CORRECTION ADJUSTMENT WIDTH in the setup menu.

For details, see Chapter 8.

❸ STORE button
To save the color settings selected by the COLOR CORRECTION joystick, hold down this button and press the MEMORY/RECALL button ❹.

❹ MEMORY/RECALL button
To save the color settings selected by the COLOR CORRECTION joystick, press this button while holding down the STORE button ❸. To recall the settings held in memory, press this button alone.

32 POSITION section

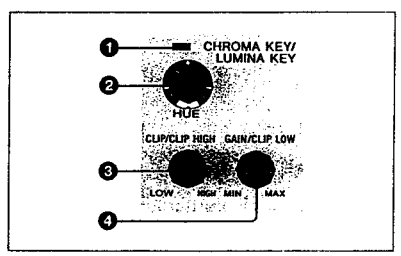


❶ POSITION indicator
Selecting a wipe pattern whose center is changeable or turning on the P IN P (picture-in-picture) button, automatically turns on this indicator, and enables the POSITION ON/OFF button ❸.

❷ POSITION joystick
When the POSITION ON/OFF button ❸ is lit, moving this joystick adjusts the position of some of the wipe patterns and the position of the insert picture in picture-in-picture mode (selected by pressing the P IN P button in the MIX/EFFECT section 28). However, the video quality of the insert picture in the picture-in-picture effect may deteriorate slightly when the insert is moved with the joystick.

❸ POSITION ON/OFF button
If you have selected a movable wipe pattern, pressing this button, turning it on, enables the POSITION joystick ❷.

33 CHROMA KEY/LUMINA KEY section



❶ CHROMA KEY/LUMINA (luminance) KEY indicator
When you press the LUMINA KEY button or the CHROMA KEY button in the MIX/EFFECT section 28, this indicator lights to inform you that the following three knobs are enabled.

❷ HUE knob
After pressing the CHROMA KEY button, turning it on, rotate this knob to select the chroma key hue.

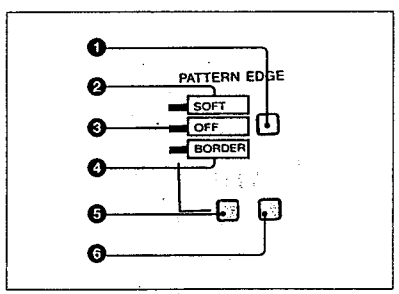
❸ CLIP/CLIP HIGH knob

- After pressing the CHROMA KEY button, turning it on, rotate this knob to select the chroma key saturation.
- After pressing the LUMINA KEY button, turning it on, rotate this knob to specify the reference level of brightness for the key. Use this control for relatively bright portions of the video.

❹ GAIN/CLIP LOW knob

- After pressing the CHROMA KEY button, turning it on, rotate this knob to adjust the gain level of the key source signal, that is the signal used to fill the background, in this system on bus A.
- After pressing the LUMINA KEY button, turning it on, rotate this knob to specify the reference level of brightness for the key. Use this control for relatively dark portions of the video.

34 PATTERN EDGE section



❶ PATTERN EDGE button

Pressing this button cycles through the SOFT indicator ❷, the OFF indicator ❸, and the BORDER indicator ❹, lighting one and turning the others off.

❷ SOFT indicator

When this indicator is on, the edges of certain wipe patterns become softer, for a fuzzy effect.

❸ OFF indicator

When this indicator is on, the wipe patterns have sharp edges.

❹ BORDER indicator

When this indicator is on, certain of the wipe patterns are given colored borders. You can adjust the border color with the COLOR button ❺, and the width with the WIDTH button ❻.

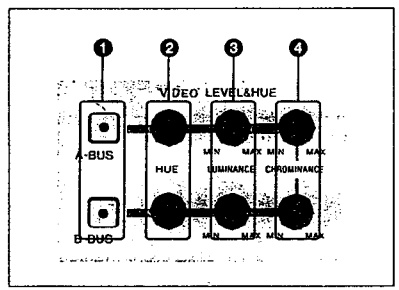
❺ COLOR button

When the BORDER indicator ❹ is lit, pressing this button cycles through the available selection of 15 border colors.

❻ WIDTH button

When the BORDER ❹ indicator is lit, pressing this button adjusts the width of the border in three steps.

35 VIDEO LEVEL & HUE section (FXE-100) VIDEO LEVEL & CHROMA PHASE section (FXE-100P)



❶ A-BUS/B-BUS buttons

Press the A-BUS button, turning it on, to make the adjustment for the A bus, and the B-BUS button, turning it on, to make the adjustment for the B bus. Press the button once more, turning it off, to return the unit to the factory default state.

❷ HUE knob (FXE-100)

Turn this knob to adjust the hue.

CHROMA PHASE knob (FXE-100P)

Turn this knob to adjust the subcarrier phase of the chrominance signal.

❸ LUMINANCE knob

Turn this knob to adjust the luminance (brightness).

❹ CHROMINANCE knob

Turn this knob to adjust the saturation.

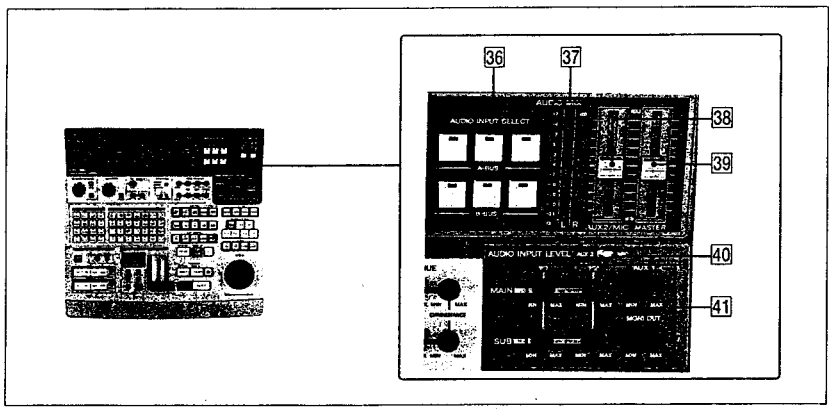
Note

The adjustment range for the HUE (FXE-100) or CHROMA PHASE (FXE-100P), LUMINANCE and CHROMINANCE knobs can be set in two steps using setup menu item 206 VIDEO LEVEL & HUE ADJUSTMENT WIDTH (FXE-100) or VIDEO LEVEL & CHROMA PHASE ADJUSTMENT WIDTH (FXE-100P).

For details, see Chapter 8.

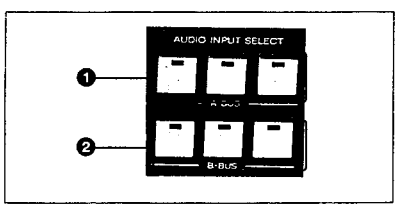
Audio Mixer Section

This block of controls provides selection and control of audio input signals.



Audio Mixer Section

36 AUDIO INPUT SELECT section



1 A-BUS audio source selection buttons
To select an audio source for bus A, independent of the A-BUS video source selected in the VIDEO INPUT SELECT section 27, extinguish the AUDIO FOLLOW button in the VIDEO INPUT SELECT section, then press one of these buttons, lighting it.

The buttons select audio sources as follows.

P1 button: Player 1 (the VCR connected to the PLAYER 1 AUDIO L/R INPUT connectors)

P2 button: Player 2 (the VCR connected to the PLAYER 2 AUDIO L/R INPUT connectors)

AUX 1 button: Auxiliary source 1 (video/audio device connected to the AUX 1 AUDIO L/R INPUT connectors)

When the AUDIO FOLLOW button in the VIDEO INPUT SELECT section is lit, the audio from the source selected by the video input selection button (other than the BKGD button) is automatically selected as the audio source for bus A.

2 B-BUS audio source selection buttons
Use these buttons to select an audio source for bus B.

37 Audio level meters
These meters show the audio levels of left and right channels of the audio output.

38 AUX (auxiliary) 2/MIC (microphone) fader
This fader controls the AUX 2 source or microphone audio mixing level. The AUX 2/MIC switch 40 determines which level is controlled. The further up the fader is, the higher the audio level.

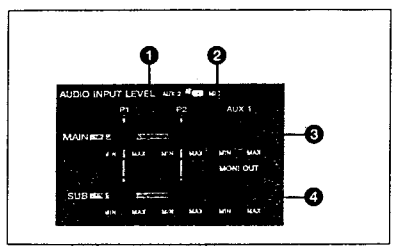
39 MASTER fader
This fader controls the level of the audio output from the PGM 1/2 OUTPUT connectors. The further up the fader is, the higher the audio level. When the PGM button in the MONITOR section 8 is lit, moving this fader also controls the audio level of output from the MONITOR OUTPUT connector.

40 AUX 2/MIC switch
This switch selects the audio level adjusted by the AUX 2/MIC fader 38.

AUX 2: Audio input to the AUX 2 AUDIO L/R connectors on the connector panel

MIC: Audio input to the MIC connector on the connector panel

41 AUDIO INPUT LEVEL section



1 P1 MAIN and P2 MAIN knobs
These knobs adjust the audio levels input to the PLAYER 1 and PLAYER 2 MAIN AUDIO L/R INPUT connectors.

2 P1 SUB and P2 SUB knobs
These knobs adjust the audio levels input to the PLAYER 1 and PLAYER 2 SUB AUDIO L/R INPUT connectors.

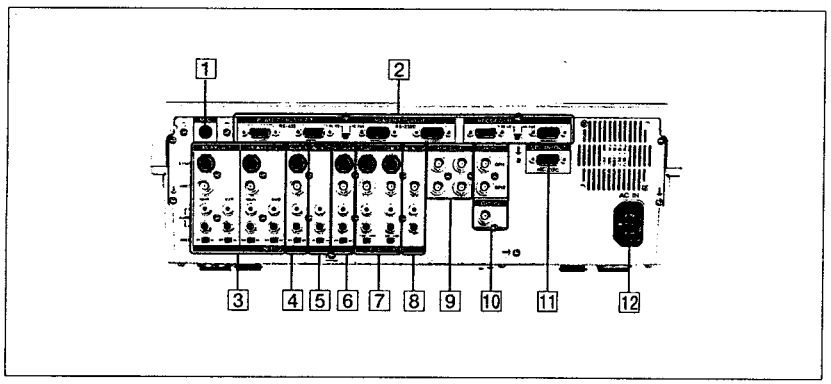
3 AUX 1 knob
This knob adjusts the audio level input to the AUX 1 L/R INPUT connectors.

4 MONI OUT (monitor output) knob
This knob adjusts the audio level output from the MONITOR AUDIO L/R OUTPUT connectors.

Each of the knobs 1 through 4 increases the volume when turned clockwise.

Connector Panel

For information about cables, see "Connections" (page 3-3).

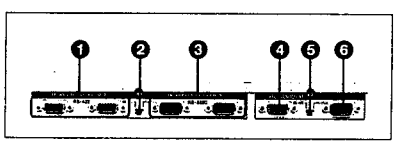


Connector panel

1 MIC (microphone) connector (monaural phone jack)

Connect a microphone. To adjust the audio input level from the microphone, set the AUX 2/MIC switch in the audio mixer section of the control panel to the MIC position, and move the AUX 2/ MIC fader.

2 VCR interface section



❶ PLAYER 1/2 RS-422 connectors (D-sub 9-pin)

When using VCRs with RS-422 interfaces for player 1 and 2, connect these connectors to the RS-422 connectors (D-sub 9-pin) on the VCRs.

❷ PLAYER 1/2 RS-422/RS-232C selector switch

RS-422: Set this switch to this position when connecting the player 1 and 2 VCRs to the PLAYER 1/2 RS-422 connectors ❶.

RS-232C: Set this switch to this position when connecting the player 1 and 2 VCRs to the PLAYER 1/2 RS-232C connectors ❸.

Note

Always turn the unit off before changing the position of the selector switches.

❸ PLAYER 1/2 RS-232C connectors (D-sub 9-pin)

When using VCRs with RS-232C interfaces for player 1 and 2, connect these connectors to the RS-232C connectors (D-sub 25-pin) on the VCRs.

❹ RECORDER RS-422 connector (D-sub 9-pin)

When using a VCR with an RS-422 interface for the recorder, connect this connector to the RS-422 connector (D-sub 9-pin) on the VCR.

❺ RECORDER RS-422/RS-232C selector switch

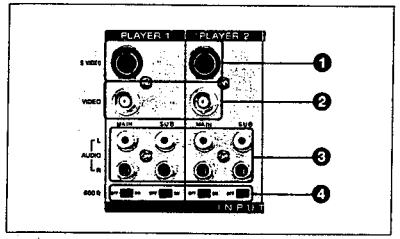
RS-422: Set the switch to this position when connecting the recorder VCR to the RECORDER RS-422 connector ❹.

RS-232C: Set the switch to this position when connecting the recorder VCR to the RECORDER RS-232C connector ❻.

❻ RECORDER RS-232C connector (D-sub 9-pin)

When using a VCR with an RS-232C interface for the recorder, connect this connector to the RS-232C connector (D-sub 25-pin) on the VCR.

3 PLAYER 1/2 video/audio inputs



❶ PLAYER 1/2 S VIDEO INPUT connectors (mini-DIN 4-pin)

Connect to the S-video output connectors of player 1 and player 2. When using these connectors, under item 101 VIDEO INPUT SELECT in the setup menu set P1 and P2 to S-V.

For details, see Chapter 8.

❷ PLAYER 1/2 VIDEO INPUT connectors (BNC)

Connect to the composite video output connectors of player 1 and player 2. When using these connectors, under item 101 VIDEO INPUT SELECT in the setup menu set P1 and P2 to V.

For details, see Chapter 8.

❸ PLAYER 1/2 AUDIO L/R INPUT connectors (phono jack)

Connect the left and right channel audio outputs from player 1 and player 2. Connect the channels which you want to use as the main audio input to the MAIN connectors, and those which you want to use as the subsidiary input to the SUB connectors.

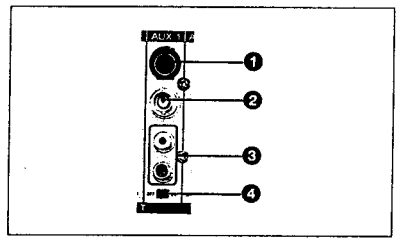
❹ 600 Ω termination switches

Set these switches to correspond to the connector type on the VCR connected to the PLAYER 1/2 AUDIO L/R INPUT connectors ❸, as follows.

ON: 600 Ω termination. VCR connector is a Cannon XLR 3-pin connector.

OFF: 47 kΩ termination. VCR connector is a phono jack.

4 AUX (auxiliary) 1 video/audio inputs



❶ AUX 1 S VIDEO INPUT connector (mini-DIN 4-pin)

Connect to the S-video output connector of the video source (video camera, VCR, laser disc player, etc.) used as auxiliary source 1. When using this connector, under item 101 VIDEO INPUT SELECT in the setup menu set AUX to S-V.

For details, see Chapter 8.

❷ AUX 1 VIDEO INPUT connector (BNC)

Connect to the composite video output connector of auxiliary source 1. When using this connector, under item 101 VIDEO INPUT SELECT in the setup menu set AUX to V.

For details, see Chapter 8.

❸ AUX 1 AUDIO L/R INPUT connectors (phono jack)

Connect the left and right channel audio outputs from auxiliary source 1.

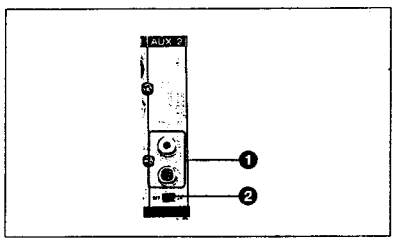
❹ 600 Ω termination switch

Set this switch to correspond to the connector type on the source connected to the AUX 1 AUDIO L/R INPUT connectors ❸, as follows.

ON: 600 Ω termination. Source connector is a Cannon XLR 3-pin connector.

OFF: 47 kΩ termination. Source connector is a phono jack.

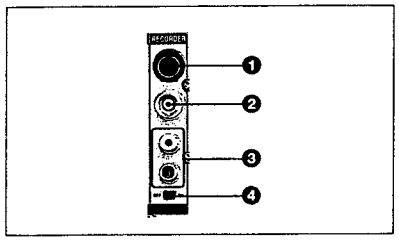
5 AUX (auxiliary) 2 audio inputs



❶ AUX 2 AUDIO L/R INPUT connectors (phono jack)
Connect the left and right channel audio outputs from the audio source (CD player, tape recorder, etc.) used as auxiliary source 2. To adjust the audio input level from auxiliary source 2, set the AUX 2/MIC switch on the audio mixer section of the control panel to the AUX 2 position, and move the AUX 2/MIC fader.

❷ 600 Ω termination switch
Set this switch to correspond to the connector type on the source connected to the AUX 2 AUDIO L/R INPUT connectors ❶, as follows.
ON: 600 Ω termination. Source connector is a Cannon XLR 3-pin connector.
OFF: 47 kΩ termination. Source connector is a phono jack.

6 RECORDER video/audio inputs



❶ RECORDER S VIDEO INPUT connector (mini-DIN 4-pin)
Connect to the S-video output connector of the recorder. When using this connector, under item 101 VIDEO INPUT SELECT in the setup menu set RECORDER to S-V. (The factory default setting is S-V.)

For details, see Chapter 8.

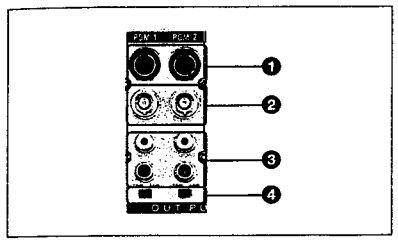
❷ RECORDER VIDEO INPUT connector (BNC)
Connect to the composite video output connector of the recorder. When using this connector, under item 101 VIDEO INPUT SELECT in the setup menu set RECORDER to V.

For details, see Chapter 8.

❸ RECORDER AUDIO L/R INPUT connectors (phono jack)
Connect the left and right channel audio outputs from the recorder.

❹ 600 Ω termination switch
Set this switch to correspond to the connector type on the recorder, as follows.
ON: 600 Ω termination. Source connector is a Cannon XLR 3-pin connector.
OFF: 47 kΩ termination. Source connector is a phono jack.

7 PGM (program) 1/2 video/audio outputs



These connectors output the program output, including all edits and special effects. The PGM 1 and PGM 2 connectors provide exactly the same video and audio signals.

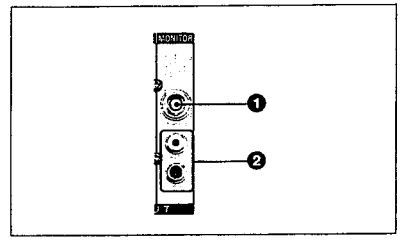
❶ PGM (program) 1/2 S VIDEO OUTPUT connectors (mini-DIN 4-pin)
Connect to the S-video input connectors of the recorder or program monitor.

❷ PGM (program) 1/2 VIDEO OUTPUT connectors (BNC)
Connect to the composite video input connectors of the recorder or program monitor.

❸ PGM (program) 1/2 AUDIO L/R OUTPUT connectors (phono jack)
Connect to the left and right channel audio input connectors of the recorder or program monitor.

❹ –7.5 dB/+4 dB termination switches
Set the output level to –7.5 dBs or +4 dBs for output of standard audio signals from the PGM 1/2 AUDIO L/R OUTPUT connectors ❸ depending on the recorder connector type.
–7.5 dB: –7.5 dBs output [1] (when input impedance on recorder side is 47 kΩ). Set to this position when connector type is phono jack.
+4 dB: +4 dBs output [1] (when input impedance on recorder side is 600 Ω). Set to this position when connector type is Cannon XLR 3-pin.

8 MONITOR output section



These connectors output the signals selected using the MONITOR section and SOURCE section of the control panel.

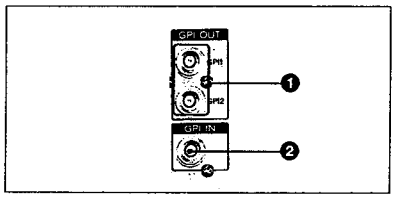
❶ MONITOR VIDEO OUTPUT connector (BNC)
Connect to the composite video input connector of the video monitor used as the main monitor.

❷ MONITOR AUDIO L/R OUTPUT connectors (phono jack)
Connect to the left and right channel audio input connectors of the main monitor.

9 B.B OUT (black burst output) connectors (BNC)
These connectors provide black burst signals from the internal sync generator. For video synchronization with sources, connect these to the reference video input, sync input, or GEN LOCK connectors of the source equipment.

1) 0 dBs = 0.775 Vrms

10 GPI (general purpose interface) connectors



❶ GPI 1/2 OUT connectors (BNC)

These connectors output timing pulses for controlling the operation of a titler, computer, or other external device. You can adjust the timing of the pulses in units of one frame under items 307 GPI 1 TIMING and 308 GPI 2 TIMING in the setup menu.

For details, see Chapter 8.

❷ GPI IN connector (BNC)

When this unit is being controlled from external equipment such as another editor, connect this connector to the GPI output connector of the other equipment to input the timing pulses from the other equipment.

11 EDL IN/OUT connector (D-sub 9-pin)

This connector transfers EDL (edit decision list) data. Connect it to the RS-232C connector of a computer or other external device equipped with an EDL management function.
Select input or output of the data under item 311 EDL SWITCH in the setup menu.

For details, see Chapter 8.

12 AC IN connector

Connect the unit to a 120 V AC power supply using the AC power cord supplied.

Precautions

Safety precautions

Power
Operate the unit on:
- 120 V AC, 50/60 Hz (FXE-100)
- 220-240 V AC, 50/60 Hz (FXE-100P).

Do not place or drop heavy objects on the power cord. Protect the cord from damage. Using a damaged power cord is dangerous. Do not grasp the cord when pulling out of a power outlet. Grasp by the plug.

Do not disassemble
Do not open the cabinet. There is a danger of shock if you touch the parts inside the unit.

Do not drop foreign objects into the unit
Do not drop flammable or metal objects into the unit. Protect from water and liquids. Foreign objects dropped into the unit can cause malfunctions.

In case of trouble
If you notice unusual noises, smells, or smoke coming from the unit, turn it off immediately. Pull the power plug from the outlet, disconnect external equipment and contact your Sony dealer or qualified Sony service personnel.

Usage precautions

Operating and storage conditions
Avoid using or storing the unit in places which are
- very hot or cold (operating temperature range 5°C to 40°C or 41°F to 104°F).
- exposed to direct sunlight, or near heaters.
- damp or dusty.
- subject to severe vibrations.
- near equipment generating strong electromagnetic emissions.
- near transmitting stations generating strong radio waves.

Protect from shocks
Avoid dropping the unit or subjecting it to strong shocks.

Maintenance
Clean the cabinet and panels by wiping with a soft, dry cloth. Remove severe stains by wiping with a cloth moistened with a neutral solvent, then wipe with a soft, dry cloth. Do not clean with alcohol, benzine, thinner, or other volatile liquids. Doing so may damage the paint or finish.

Transporting the unit
When transporting the unit, protect from shocks by packing in the supplied carton or a comparable case.

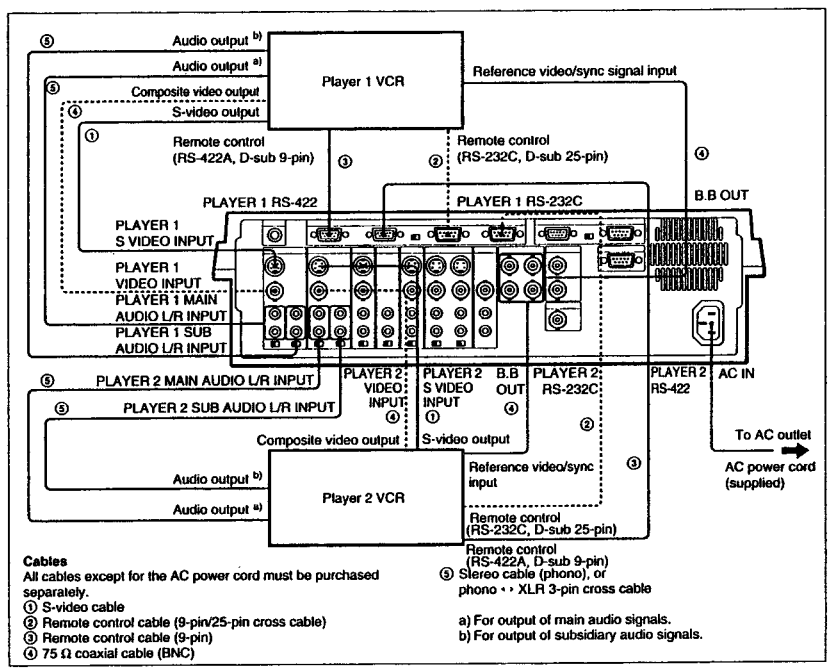
Connections

This section describes connections to VCRs and other external equipment.

For more information about configuring a system for a particular purpose, see "System Configuration Examples" (page 1-6).

Player 1 and Player 2 VCR Connections

Connect two players to perform A/B roll editing. Cut editing and A-roll editing are possible using one player.



Player 1 and player 2 VCR connections

Notes

- Depending on the connectors utilized here or on the connected equipment, settings may have to be changed on the connector panel or in the setup menu.

  For details, see "Switch Settings and System Setup" (page 3-8).

- After connecting the player and recorder VCRs, press the LEARN button on the control panel.

  For details about the LEARN button, see "Measuring pinch-on delay" (page 3-15).

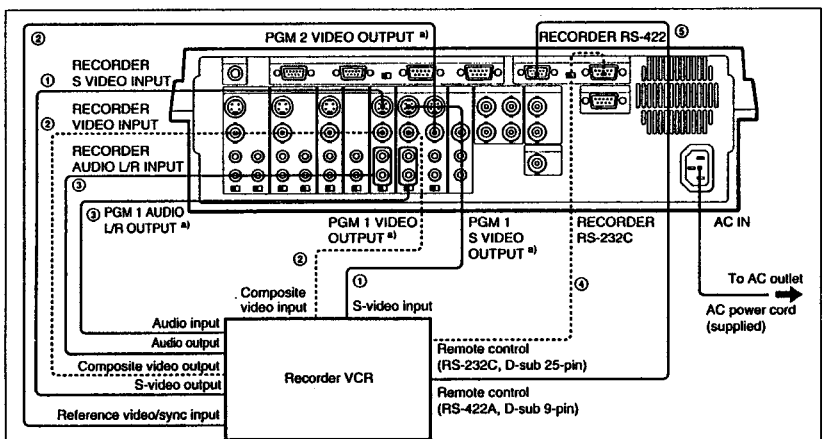
- Depending on the connected VCRs, device constants may have to be set using setup menu items 401 and 402.

  For details, see Chapter 8.

Recorder VCR Connections

When the recorder's video and audio output connectors are connected to this unit's RECORDER INPUT connectors, freeze frame video may be input from the recorder to carry out mixes and wipes during A-roll editing. Also, signals can be input from the recorder in order to check the contents of the master tape on the main monitor.

For more information about monitor connections, see "Main Monitor and Program Monitor Connections" (page 3-5).



Cables
All cables except for the AC power cord must be purchased separately.
① S-video cable
② 75 Ω coaxial cable (BNC)
③ Stereo cable (phono), or phono ‹ › XLR 3-pin cross cable
④ Remote control cable (9-pin/25-pin cross cable)
⑤ Remote control cable (9-pin)

a) PGM 1 and PGM 2 output the same signals. Either may be connected as convenient.

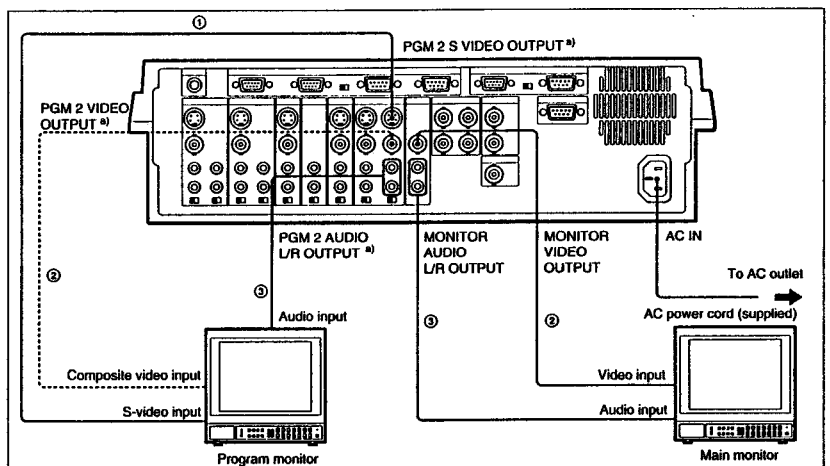
Recorder VCR connections

Notes

- As input to the recorder's reference video input connector, use signals from this unit's PGM 1/2 VIDEO OUTPUT connectors instead of signals from the B.B OUT connector.
- If the correct recorder freeze frame cannot be read in during A-roll editing, adjust the timing of freeze frame input under item 108 A-ROLL TIMING OFFSET in the setup menu.
- Depending on the connectors utilized here or on the connected equipment, settings may have to be changed on the connector panel or in the setup menu.
  For details, see "Switch Settings and System Setup" (page 3-8).
- After connecting the player and recorder VCRs, press the LEARN button on the control panel.
  For details about the LEARN button, see "Measuring pinch-on delay" (page 3-15).
- Depending on the connected VCR, a device constant may have to be set using setup menu item 403.
  For details, see Chapter 8.

Main Monitor and Program Monitor Connections

Connecting a monitor to each VCR allows you to monitor the video and audio of each VCR continuously. But this unit is also equipped with a MAIN MONITOR connector, which allows you to monitor preview signals, program signals, and the signals of the connected VCRs.
A program monitor may be connected in order to monitor the signals that are sent to the recorder.



Cables
All cables except for the AC power cord must be purchased separately.
① S-video cable
② 75 Ω coaxial cable (BNC)
③ Stereo cable (phono)

a) PGM 1 and PGM 2 output the same signals. Either may be connected as convenient.

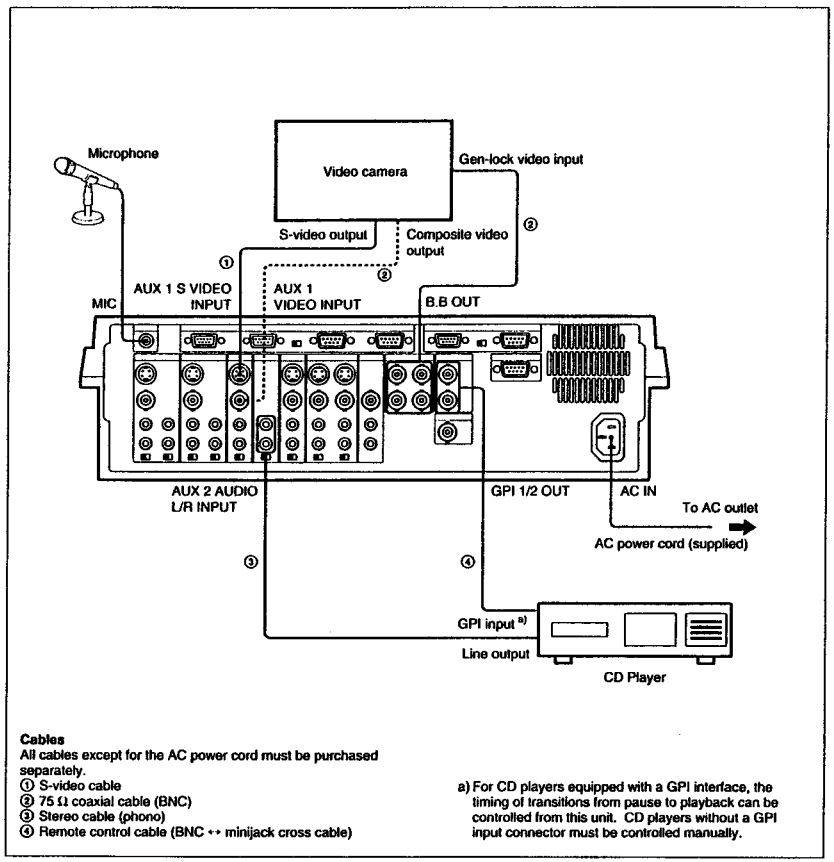
Main monitor and program monitor connections

Note

Depending on the connectors utilized here or on the connected equipment, settings may have to be changed on the connector panel or in the setup menu.

For details, see "Switch Settings and System Setup" (page 3-8).

Video Camera, CD Player and Microphone Connections



Cables
All cables except for the AC power cord must be purchased separately.
① S-video cable
② 75 Ω coaxial cable (BNC)
③ Stereo cable (phono)
④ Remote control cable (BNC ↔ minijack cross cable)

a) For CD players equipped with a GPI interface, the timing of transitions from pause to playback can be controlled from this unit. CD players without a GPI input connector must be controlled manually.

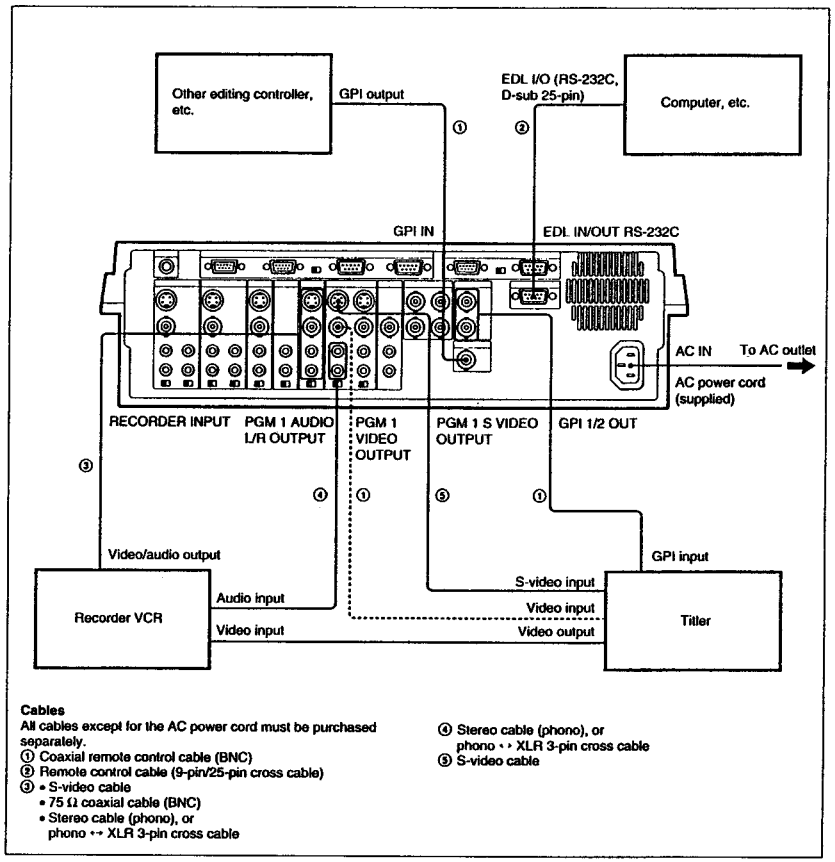
Video camera, CD player and microphone connections

Note

Depending on the connectors utilized here or on the connected equipment, settings may have to be changed on the connector panel or in the setup menu.

For details, see "Switch Settings and System Setup" (page 3-8).

Titler, Computer and Editing Controller Connections



Cables
All cables except for the AC power cord must be purchased separately.
① Coaxial remote control cable (BNC)
② Remote control cable (9-pin/25-pin cross cable)
③ • S-video cable
  • 75 Ω coaxial cable (BNC)
  • Stereo cable (phono), or phono ↔ XLR 3-pin cross cable
④ Stereo cable (phono), or phono ↔ XLR 3-pin cross cable
⑤ S-video cable

Titler, computer and editing controller connections

Note

Depending on the connectors utilized here or on the connected equipment, settings may have to be changed on the connector panel or in the setup menu.

For details, see "Switch Settings and System Setup" (page 3-8).

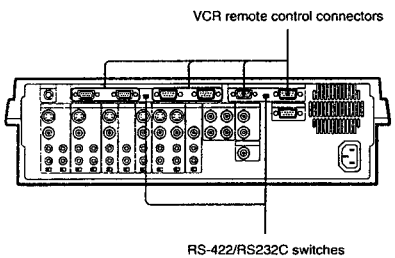
Switch Settings and System Setup

Depending on which connectors are used on the connector panel, and the type of connectors used by connected equipment, it may be necessary to set connector panel switches or change settings in the setup menu.
This section explains the correct settings for each group of connectors.

For details regarding the setup menu, see Chapter 8.

VCR remote control connectors

Set the RS-422/RS-232C switch as follows, depending on the connector used to control the VCR.



Connector used	RS-422/RS-232C switch setting
RS-422	RS-422
RS-232C	RS-232C

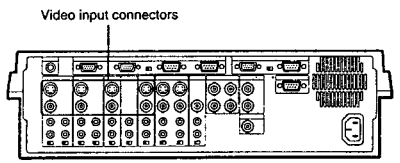
VCR remote control connectors and RS-422/RS-232C switches

Notes

- Always connect the same connectors for both player 1 and player 2. For example, it is not possible to connect player 1 using the RS-232C connector and player 2 using the RS-422 connector.
- Always turn the unit off before changing the RS-422/RS-232C switch setting. If you have changed the setting with the power on, turn unit off and power up again.

Video input connectors

Set item 101 "VIDEO INPUT SELECT" in the setup menu as follows, depending on the connectors used for video input.



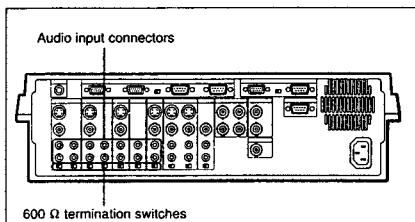
Connector used	Menu item 101 VIDEO INPUT SELECT setting
S VIDEO	S-V a)
VIDEO	V

a) Factory preset to S-V

Video input connectors and VIDEO INPUT SELECT setting

Audio input connectors

Set the 600 Ω audio input termination switches as follows, depending on the type of audio output connectors on the connected equipment.

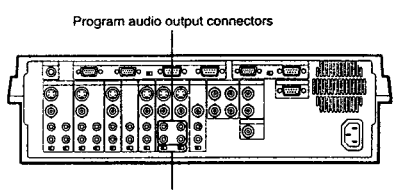


Type of connector on connected equipment	600 Ω termination switch setting
Phono jack	OFF
Cannon XLR 3-pin	ON

Audio input connectors and 600 Ω termination switches

Program audio output connectors

Set the –7.5dB/+4dB audio output switches as follows, depending on the type of audio input connectors on the connected equipment.

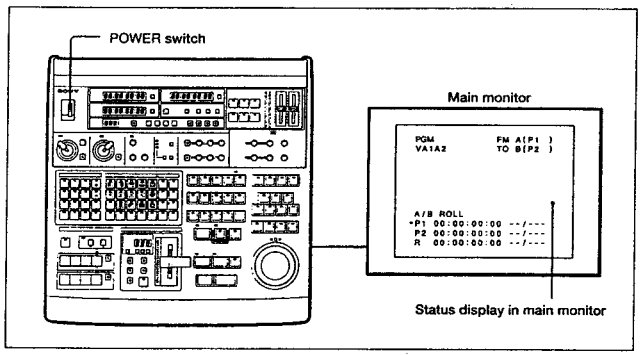


Type of connector on connected equipment	–7.5dB/+4dB switch setting
Phono jack	–7.5dB
Cannon XLR 3-pin	+4dB

Program audio output connectors and –7.5dB/+4dB switches

About the Status Display

When you turn on this unit and the main monitor, the following information is displayed to indicate the current edit mode, sources, and edit points.



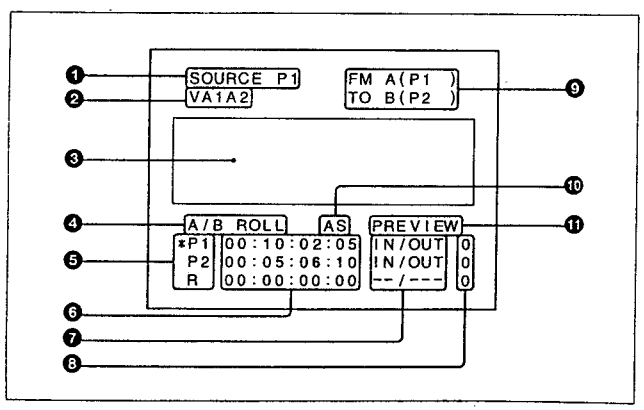
Status display

Interpreting the status display

This section lists the information which appears in each section of the status display.

- See the page numbers given in parentheses after each item for detailed explanations of display items or related procedures.
- The following abbreviations are used for sources and the recorder.

P1: Player 1
P2: Player 2
R: Recorder
AUX: Auxiliary source 1



Information in status display

❶ Monitor signal area (page 4-11)

Displays the source of the signals selected with the buttons in the MONITOR section and currently being output from the MONITOR OUTPUT connectors to the main monitor.

SOURCE P1 (P2, R-VTR, AUX): A source selected with the SOURCE button in the MONITOR section and the buttons in the SOURCE section
PGM: The same signals as are output from the PGM 1/2 OUTPUT connectors
A-BUS P1 (P2, AUX): The source selected for bus A
B-BUS P1 (P2, AUX): The source selected for bus B

❷ Edit mode area (page 5-3)

Displays the mode selected in the EDIT MODE section.

VA1A2: Signal channel(s) selected with insert mode buttons (V: Video channel, A1: Audio channel 1, A2: Audio channel 2)
ASMBL: Assemble mode
1ST-EDIT: First edit mode
TC-INS: Time code insert mode

❸ Error message area (page A-2)

Error messages are displayed here.

❹ Edit type area (page 5-9)

Displays the edit type selected in the EDIT TYPE section.

CUT P1 (P2, AUX): Cut edit using P1, P2, or AUX on bus A
A-ROLL P1 (P2, AUX): A-roll edit using P1, P2, or AUX on bus A
A/B ROLL: A/B roll edit
MANUAL: Manual effects edit
SYNC-ROLL: Sync roll edit

❺ Selected VCR (page 4-2)

- An asterisk (*) precedes the name of the selected VCR.
- When auxiliary source 1 is selected by pressing the AUX button in the SOURCE section, "R" changes to "AUX".

❻ Time data area (page 5-13)

- Displays the IN point, OUT point and duration for each VCR in (hours: minutes: seconds: frames) format.

Note

Time code displayed in this area may be slightly later than time code signals actually recorded on the tape. If you want to superimpose time code on signals sent to the MONITOR OUTPUT connectors for use in off-line editing, use a time code reader.

With the FXE-100, a period (.) is displayed instead of a colon (:) between minutes and seconds when drop-frame mode time code is found on the recorded tape.

Example: 00:10.02:05
↑— Drop-frame mode time code was found on the recorded tape. This period is displayed regardless of the setting of setup menu item 110 FRAME CONTROL MODE (FXE-100 only).

A period (.) is displayed instead of a colon (:) between seconds and frames when time code has been interpolated from CTL signals because time code signals could not be read from the tape.

Example: 00:10:02.05
↑— Indicates that time code data has been interpolated from CTL signals.

- Displays the split offset (distance between video IN point and audio IN point) during split editing.

For details, see "Setting Independent Video and Audio IN Points—Split Editing" (page 6-8).

- Displays initial DT speed in DMC editing.

For details, see "Editing Variable-Speed Playback—DMC Editing" (page 6-13).

❼ Edit points area (page 5-13)

- Indicates whether or not IN/OUT points have been set for sources and recorder.
  IN/– – –: IN point is set.
  – –/OUT: OUT point is set.
  IN/OUT: IN and OUT points are set.
  – –/– – –: IN and OUT points are not set.
- Indicates the type of data displayed in the time data area ❻ when the IN, OUT or DUR button in the AUTO CONTROL section are pressed.
  IN: IN point is being displayed.
  OUT: OUT point is being displayed.
  DUR: Duration is being displayed.
- In numeric keypad mode, indicates the type of data being entered.
  SET IN: IN point is being entered.
  SET OUT: OUT point is being entered.
  SET DUR: Duration is being entered.

❽ Sync grade display (page 5-65)

Displays the synchronizing precision selected with item 301 SYNC GRADE in the setup menu, when setup menu item 303 SYNC GRADE DISPLAY is set to ON. Note that the factory default setting for this item is OFF, for no sync grade display.
1: ACCURATE
2: +/–1 FRAME
3: ROUGH
4: PREROLL & PLAY

For details, see Chapter 8.

❾ FROM source/TO source area (page 5-60)

When two sources are used, displays which signals are replaced during a transition.
FM: FROM source
TO: TO source
A: A bus
B: B bus
P1, P2, AUX: Source name

❿ "AS" area (page 6-8)

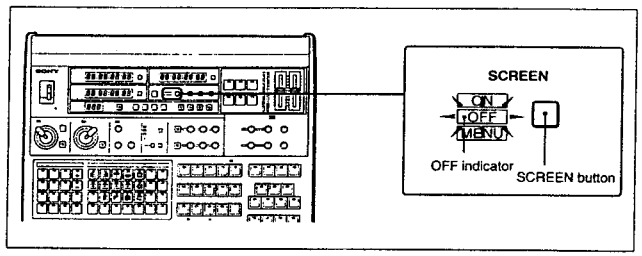
Shown when split editing (Audio Split) has been selected.

⓫ Operation area

Shows the current operation.
PREVIEW: Preview (page 5-61)
AUTO EDIT: Automatic edit execution (5-63)
REVIEW: Review (5-68)
AUTO ASMBL: Automatic assembly (5-66)

About the Status Display

To turn off the main monitor status display
Press the SCREEN button until the OFF indicator lights.



Turning off the status display

VCR Preparations

After connecting the VCRs, carry out the following preparations.

For more information about settings on the VCR side, please consult your VCR manuals.

- Insert a cassette.
- Set the REMOTE/LOCAL switch to REMOTE.
- Adjust the following:

Player VCRs
- Audio playback level
- Tracking
- Skew

Recorder VCR
- Video recording level
- Audio recording level
- Tracking

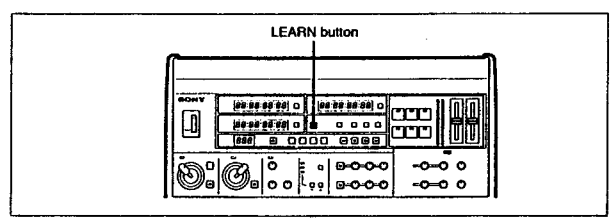
Measuring pinch-on delay

When a VCR receives a tape transport command, the tape does not begin to move instantly. A certain amount of time, called the pinch-on delay, is required for the mechanical process of initiating tape transport. This unit has a function for measuring the pinch-on delay for up to three VCRs, connected to the PLAYER 1, PLAYER 2, and RECORDER RS-422 and RS-232C connectors. Measurement data is held in memory and used by the unit to synchronize VCRs as quickly as possible. After connecting the VCRs, be sure to press the LEARN button.

After connecting the VCRs, be sure to measure the pinch-on delay as follows.

1 Insert tapes into each of the VCRs connected to the RS-422 and RS-232C connectors.

2 Press the LEARN button on the control panel, turning it on.



Measuring pinch-on delay

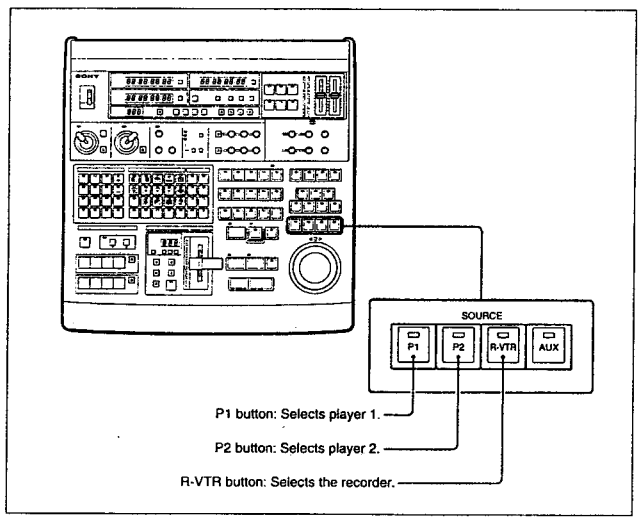
The VCRs begin to run, and the delay is measured automatically.
Measurement data is held in memory for about one week after the unit is turned off.
A check of preroll times which have been selected for each of the VCRs in the setup menu is also carried out. If the preroll times are too short, error codes are displayed in the corresponding time counter displays.

Controlling the VCRs

The following section explains how to use this unit for manual control of two player VCRs and one recorder VCR, connected to the PLAYER 1/2 RS-422/RS-232C connectors and the RECORDER RS-422/RS-232C connectors on the connector panel.

Selecting a VCR

When setting VCR edit points, or manually controlling VCR tape transport from this unit, select the VCR for each operation by pressing one of the P1, P2 or R-VTR buttons in the SOURCE section of the control panel.



Selecting a VCR

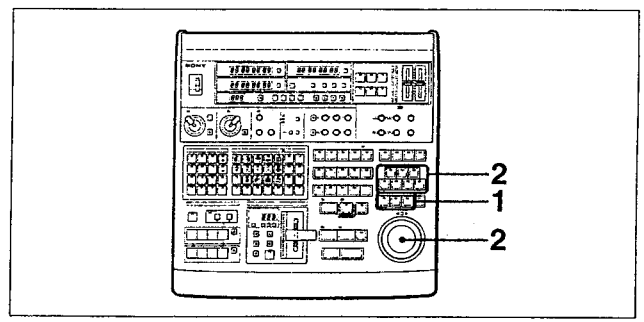
The button lights when you press it, and a '*' mark appears beside the selected VCR in the status display of the main monitor screen.

For details, see "About the Status Display" on page 3-10.

Controlling Tape Transport Manually

When controlling tape transport manually from this unit, you can select two or three VCRs for simultaneous operation. This means that if you connect a monitor to each VCR, you can view playback and search for edit points on up to three VCRs simultaneously. Compared to a system with only one monitor, this configuration eliminates the need to switch back and forth between VCRs to view video output.

For details, see "Monitoring Video and Audio Signals" (page 4-11).



Controlling tape transport manually

1 Select a VCR with a button from the SOURCE section (P1, P2, R-VTR).

2 According to the operation, press one of the buttons in the MANUAL CONTROL section (the button lights), or use the search dial.

- **Using the MANUAL CONTROL buttons**

REC button: Hold down this button and press the PLAY button when you wish to record output signals from the PGM 1/2 OUTPUT connectors without making any edit settings.
This button works only when the R-VTR button in the SOURCE section is lit, and it affects only the recorder.

SPEED, MK-SPD (= SHIFT + SPEED) and DMC buttons: Use these buttons to control VCRs with dynamic tracking capability in Dynamic Motion Control (DMC) mode.

For more information about Dynamic Motion Control, see "Controlling the Speed of Dynamic Tracking (DT) Playback" (page 4-6) and "Editing Variable-Speed Playback — DMC Editing" (page 6-13).

PLAY button: Press to begin playback.

(Continued)

STB OFF (= SHIFT + PLAY) button: Press to put a paused VCR into standby off mode (in order to protect the tape and heads while you take an appreciable break from editing).
STILL button: Press to put a VCR into still picture playback mode.
EJECT (= SHIFT + STILL) button: Press to eject a cassette.
REW button: Press to rewind a tape.
FF button: Press to fast forward a tape.
STOP (= SHIFT + FF) button: Press to stop a VCR.

- **Using the search dial**
  Use the search dial to search for a scene at convenient playback speeds.

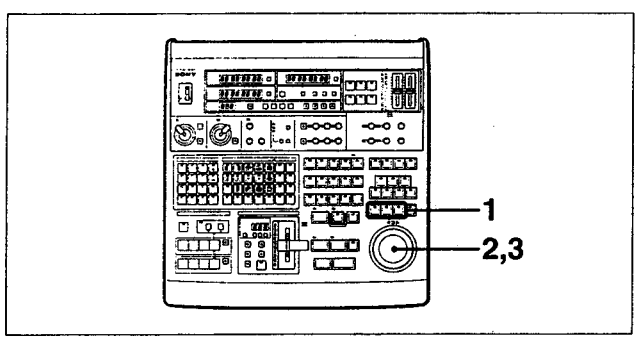
  For details, see "Searching for a Scene With the Search Dial" below.

3 Repeat steps **1** and **2** to control other VCRs. You can control up to three VCRs simultaneously.

Searching for a Scene With the Search Dial

When setting edit points, you can increase your editing efficiency by using the search dial to play back the tape at different speeds.
Each time you press the search dial, it changes from a raised to a depressed position, or the reverse. With the dial in the raised position, you can play back the tape at high speed in the forward or reverse directions (shuttle mode). With the dial in the depressed position, you can play back the tape in frame-by-frame manner in the forward or reverse directions (jog mode).

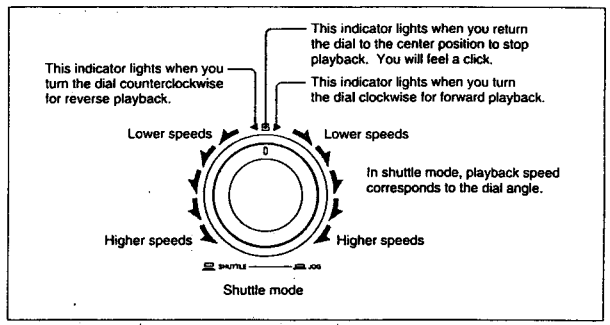
By combining shuttle and jog modes, you can locate scenes on the tape quickly and efficiently.



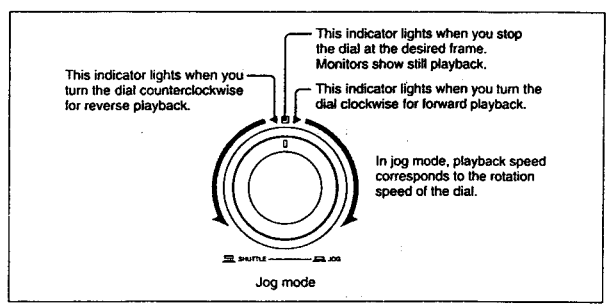
Searching for a scene with the search dial

1 Select a VCR with a button from the SOURCE section (P1, P2, R-VTR).

2 With the search dial in the raised position (shuttle mode), turn the dial clockwise or counterclockwise for high-speed playback. When you find the desired scene, return the dial to the center position to stop playback.



3 Press the search dial down to the depressed position (jog mode), and turn the dial clockwise or counterclockwise to play back the tape frame by frame. When you find the desired frame, stop the dial at that position.

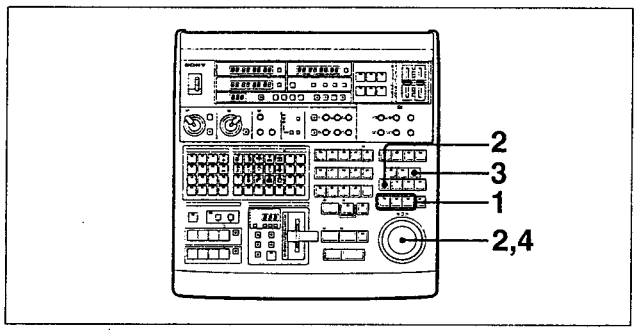


Note

The range of controllable playback speeds may differ in both jog and shuttle modes, depending on the capabilities of the connected VCRs.

Controlling the Speed of Dynamic Tracking (DT) Playback

This unit supports Dynamic Motion Control (DMC). If your player VCRs support Dynamic Tracking (DT) playback, you can use the search dial to control tape speed for noiseless, variable-speed playback within their DT playback range.



Controlling DT playback speed

1 Select a VCR with a button from the SOURCE section (P1, P2, R-VTR).

2 Rotate the search dial or press the PLAY button in the MANUAL CONTROL section to begin playback.

3 Stop the dial at the scene where you wish to begin DT playback, and press the DMC button in the MANUAL CONTROL section, turning it on.

The selected VCR enters DMC mode.

4 Press the search dial to put it into shuttle mode, and rotate it to control the speed of DT playback.

In DMC mode, tape speed varies between –1 to +3 times normal speed, according to the angle of the dial. However, actual speeds may differ slightly, depending on the capabilities of the connected VCRs.

Selecting Video and Audio Signals

This section is a preliminary introduction to the video switching and audio mixing features of this unit. It explains how to select input and output signals, how to adjust them, and how to monitor program signals on the main and program monitors.

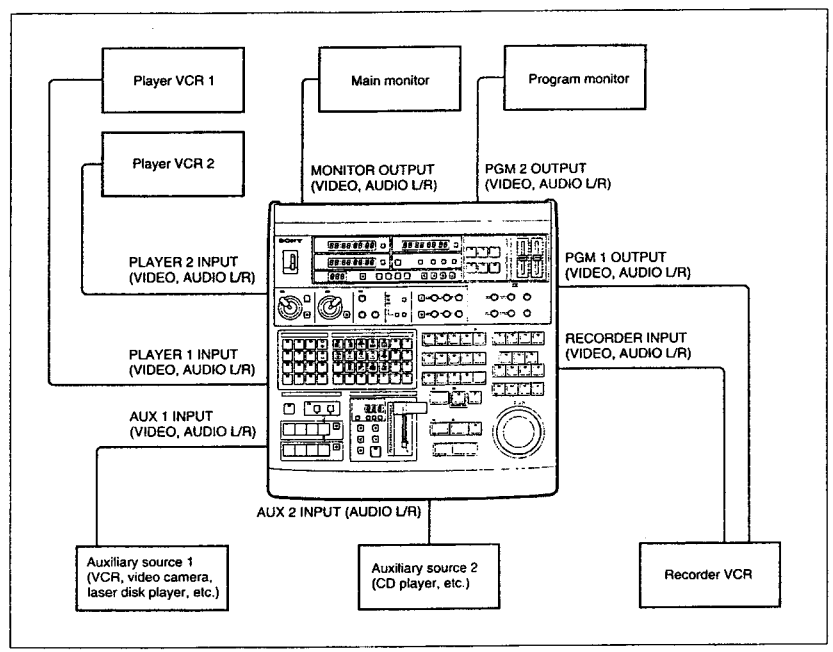
For more information about input and output of audio signals, see "Audio Signal Flow " in the Appendixes (page A-7).

The following explanations assume a system configured as shown below.

Note

Some settings may differ depending on the connected VCRs.

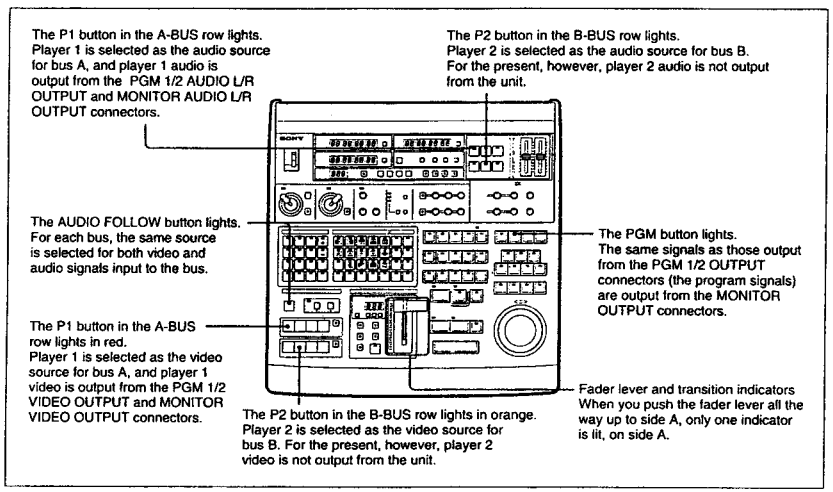
For details, see "Connections" (page 3-3).



Connected equipment and video/audio I/O connectors

Default Input and Output Signals

Turn the unit on, and push the fader lever up all the way toward side A. As soon as you begin playback or shooting with the connected sources, video and audio from player 1 will be output to the recorder, connected to the PGM 1 OUTPUT connector, to the program monitor, connected to the PGM 2 OUTPUT connectors, and to the main monitor, connected to the MONITOR OUTPUT connectors. This is because the unit is automatically initialized as follows when you turn it on, depending on the position of the fader lever.



Default input and output signals

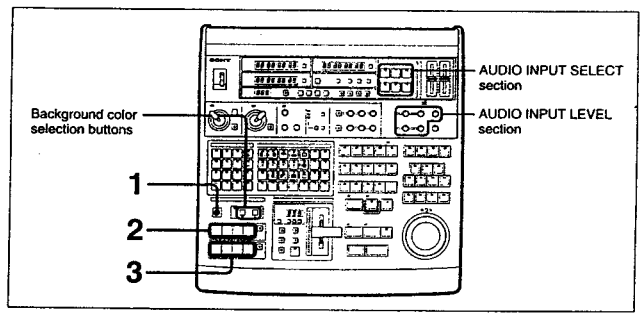
About the colors of input button lights

The meanings of the different colors of the buttons in the A-BUS row and B-BUS row of the VIDEO INPUT SELECT section are as follows.

- When a button **lights in red**, it means that the signal selected with that button is output from the PGM 1/2 OUTPUT connectors.
- When a button **lights in orange**, it means that the signal has been selected for input to the A or B bus, but not for output.
- When two buttons in either the A-BUS row or the B-BUS row **light in red**, it means that the signals selected with those buttons are mixed for output.
- When a button **flashes**, it means that there is no input to the connector selected by that button.
- **About the BKGD buttons**
  The BKGD buttons in the VIDEO INPUT SELECT section select color background output. Note that these buttons take precedence over other buttons in the same row (P1, P2, AUX). Even if the other buttons are lit, the output will be the color background.

Selecting the Same Source for Video and Audio Inputs to a Bus

When the AUDIO FOLLOW button in the VIDEO INPUT SELECT section is lit, an operation which selects a video signal for input to a bus automatically selects the audio signal from the same source.



Selecting audio and video simultaneously

1 If the AUDIO FOLLOW button is not lit, press it turning it on.

2 To select the input signals for bus A, press the desired button in the A-BUS row of the VIDEO INPUT SELECT section so that it lights in red or orange.

For the meaning of the red and orange colors, see "About the colors of input button lights" on page 4-8.

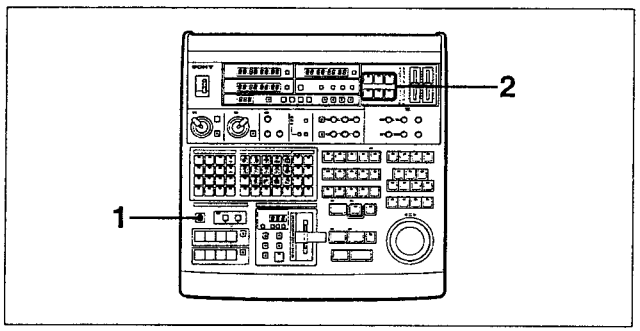
P1 button: Selects player 1 audio and video.
The P1 button in the A-BUS row of the AUDIO INPUT SELECT section lights automatically.
P2 button: Selects player 2 audio and video.
The P2 button in the A-BUS row of the AUDIO INPUT SELECT section lights automatically.
AUX button: Selects auxiliary source 1 audio and video.
The AUX 1 button in the A-BUS row of the AUDIO INPUT SELECT section lights automatically.
BKGD button: Selects a background color generated by the built-in color background generator.
You can select one of 25 colors by pressing the background color selection buttons (▲/▼).

When you press the BKGD button, any other buttons which may have been lit in the A-BUS row of the VIDEO INPUT SELECT section remain lit. However, the selection made with the BKGD button is given priority. Note that the audio signals of the currently selected source are always output, and may be adjusted with the controls in the AUDIO INPUT LEVEL section.
For more information about adjusting the audio level, see "Adjusting Audio Levels" (page 4-16).

3 Proceed in the same way to make selections for bus B, pressing the desired button in the B-BUS row of the VIDEO INPUT SELECT section.

Selecting Different Sources for Video and Audio Inputs to a Bus

You can select video and audio signals from different sources for input to each bus.



Selecting different sources for video and audio inputs to a bus

1 If the AUDIO FOLLOW button in the VIDEO INPUT SELECT section is lit, press it turning it off.

2 Press the desired buttons in the A-BUS and B-BUS rows of the AUDIO INPUT SELECT section, turning them on.

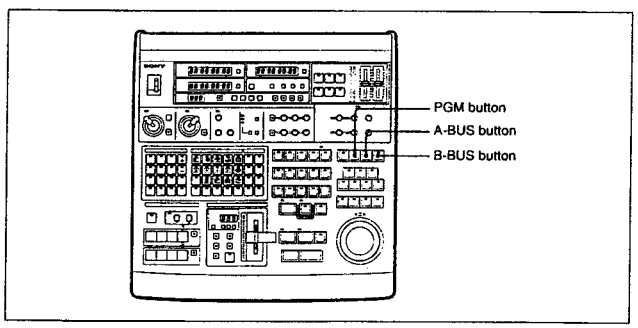
P1 button: Selects audio input from player 1.
P2 button: Selects audio input from player 2.
AUX 1 button: Selects audio input from auxiliary source 1.

Monitoring Video and Audio Signals

You can monitor signals from bus A or bus B on both the program monitor, connected to the PGM 2 OUTPUT connectors, and the main monitor, connected to the MONITOR OUTPUT connectors.
In addition to signals from bus A and bus B, you can monitor signals from any connected source on the main monitor.

Monitoring bus signals on the main monitor

To output signals from bus A to the main monitor, press the A-BUS button in the MONITOR section, turning it on. To output signals from bus B, press the B-BUS button. If you press the PGM button in the MONITOR section, you can output the signals currently being output from the PGM 1/2 OUTPUT connectors to the main monitor.



Monitoring bus signals on the main monitor

Monitoring bus signals on the program monitor

When viewing output signals on the program monitor, you can switch from A-bus signals to B-bus signals, or the reverse.

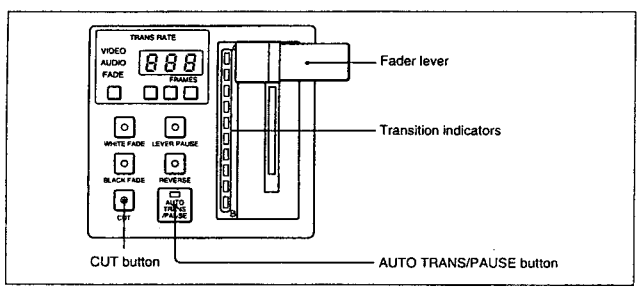
Example: Switching from A-bus signals to B-bus signals

- Press the CUT button in the EFFECT TRANSITION section.
  The output from the PGM 1/2 OUTPUT connectors switches instantly from A-bus signals to B-bus signals.
  The single transition indicator which had been lit on the A side goes out, and a single transition indicator lights on the B side.
  When the CUT button is pressed, the AUTO TRANS/PAUSE button lights automatically, and the unit enters auto transition mode.

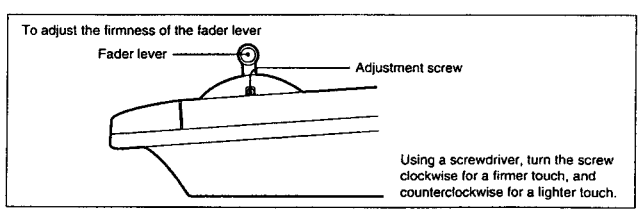
For details about auto transition mode, see "Auto Transition Effects" (page 6-6).

Or

- Pull the fader lever down from the A side to the B side.
  If the NORMAL MIX button in the MIX/EFFECT section is lit, then signals from bus A are mixed with signals from bus B during the time that the fader lever is being pulled from side A to side B. When the fader lever is pulled all the way down to side B, signals are output from bus B only.
  As the transition progresses, the number of lit transition indicators increases, and then decreases to only one when the fader lever is pulled all the way down to the B side.

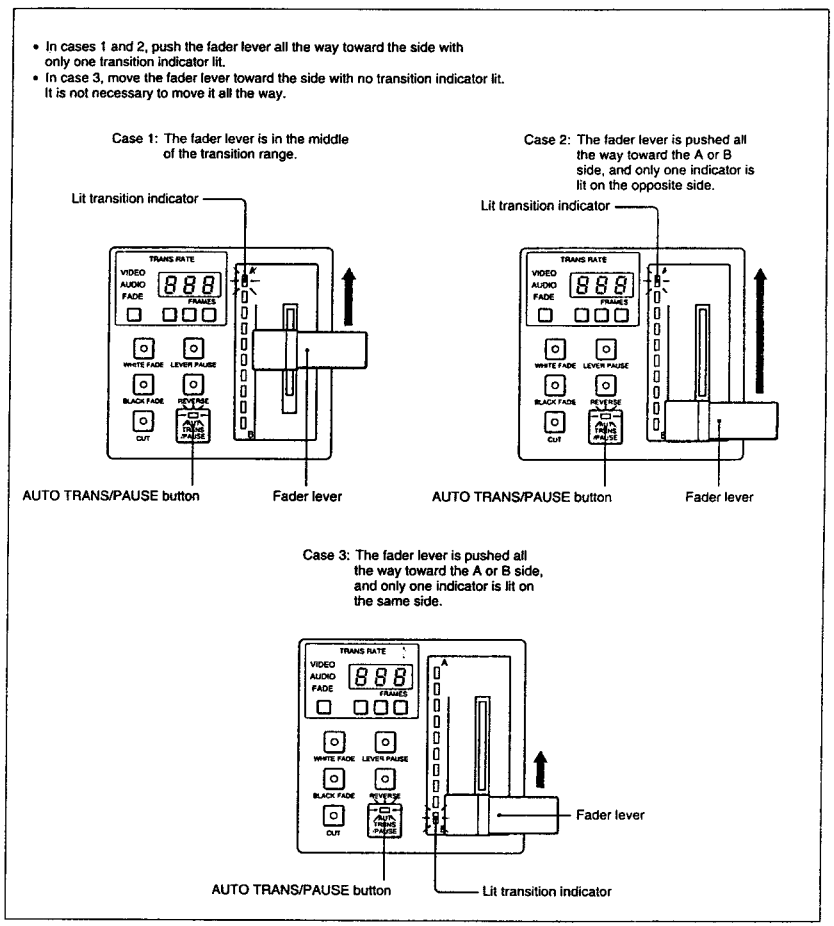


Switching output to the program monitor



Note on the fader lever

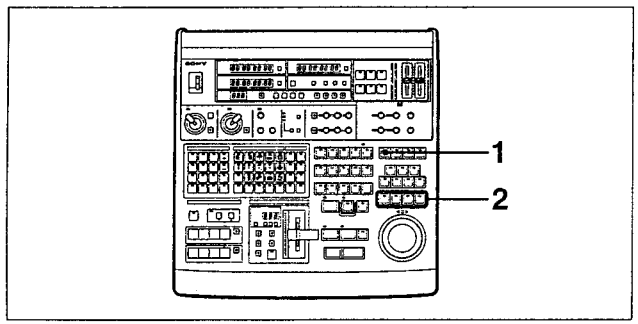
When the AUTO TRANS/PAUSE button is lit, the fader lever is disabled. To use the fader lever, you must extinguish the AUTO TRANS/PAUSE button.
To extinguish the AUTO TRANS/PAUSE button, proceed as follows:



To extinguish the AUTO TRANS/PAUSE button

Monitoring source signals directly

You can output source signals directly to the main monitor without passing through the A bus or the B bus.
Proceed as follows to select source signals for direct output to the main monitor.



Switching source signals for output to the main monitor

1 Press the SOURCE button in the MONITOR section, turning it on.

The PGM button goes out. The video and audio signals which are currently selected by SOURCE section buttons are output to the main monitor.

2 To monitor another source, press the desired SOURCE section button, turning it on.

P1 button: To monitor audio and video input from player 1.
P2 button: To monitor audio and video input from player 2.
R-VTR button: To monitor audio and video input from the recorder.
AUX button: To monitor audio and video input from auxiliary source 1.

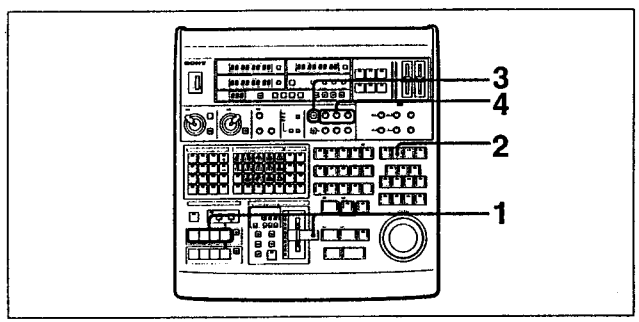
The SOURCE section button which had been lit up to now goes out, and signals from the newly selected source are output to the main monitor.

Adjusting Video and Audio Signals

By adjusting the color characteristics of input video, and adjusting the audio input level, you can output signals to match the effects you desire from the PGM 1/2 OUTPUT connectors.

Adjusting Video Signals

While viewing the monitor, you can adjust the hue (FXE-100) or color subcarrier phase (FXE-100P), luminance, and chrominance of the video output.
The following example shows how to adjust A-bus video output signals while viewing the monitor.



Adjusting video signals

1 Push the fader lever up to the A side, and select the signals you want to adjust with the selection buttons in the A-BUS row of the VIDEO INPUT SELECT section.

2 Press the PGM button in the MONITOR section.

The signals selected in step **1** are output to the main monitor.

3 Press the A-BUS button in the VIDEO LEVEL & HUE (FXE-100) or VIDEO LEVEL & CHROMA PHASE (FXE-100P) section.

The HUE (FXE-100) or CHROMA PHASE (FXE-100P), LUMINANCE and CHROMINANCE knobs to the right of the button are enabled.

4 While viewing the main monitor, rotate the knobs to adjust the video.

HUE knob (FXE-100): Adjusts the hue.
CHROMA PHASE knob (FXE-100P): Adjusts the color subcarrier phase.
LUMINANCE knob: Adjusts the brightness.
CHROMINANCE knob: Adjusts the saturation.

Note for FXE-100P

When adjusting the color subcarrier phase, use a vectorscope to measure the adjustments.

If you want to adjust the white balance, use the COLOR CORRECTION joystick.

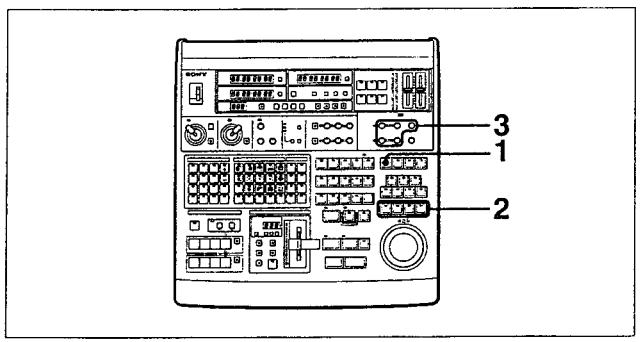
For details, see "Color correction" (page 5-51).

Adjusting Audio Levels

This section will explain how to adjust audio input and output levels.

Adjusting the audio input level

To adjust the audio input level from VCRs or auxiliary source 1, proceed as follows.



Adjusting the audio input level from VCRs or auxiliary source 1

1 Press the SOURCE button in the MONITOR section, turning it on.

2 Select the audio source by pressing one of the buttons (P1, P2, R-VTR, AUX) in the SOURCE section.

P1 button: Player 1
P2 button: Player 2
R-VTR button: Recorder
AUX button: Auxiliary source 1

3 Adjust using the knobs in the AUDIO INPUT LEVEL section, while monitoring the audio level meters in the audio mixer section.

P1 MAIN, P2 MAIN knobs: Player 1 and player 2 main audio level.
P1 SUB, P2 SUB knobs: Player 1 and player 2 secondary audio level.
AUX 1 knob: Auxiliary input 1 audio level.

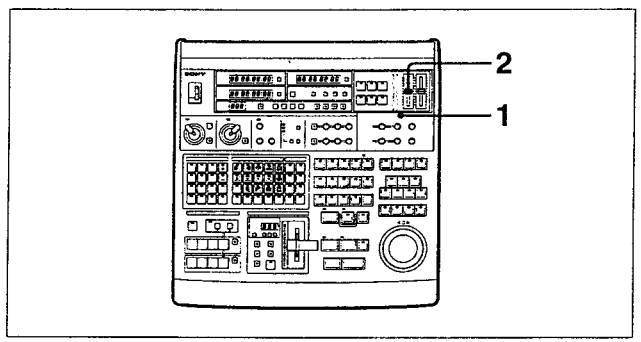
Note

The left (L) and right (R) channels are adjusted together. They cannot be adjusted separately.

Adjusting audio input from microphones and auxiliary source 2

Regardless of the position of the fader lever (and the number of lit transition indicators), you can mix narration and background music from a microphone or auxiliary source at the desired level with the audio of bus A or bus B, for output from the PGM 1/2 AUDIO L/R OUTPUT connectors.

To adjust the level of audio input from the microphone or auxiliary source 2, proceed as follows.



Adjusting the level of audio input from microphones and auxiliary source 2

1 Using the AUX 2/MIC switch in the audio mixer section, select the audio signal which you wish to adjust.

AUX 2: Adjust the level of audio input from auxiliary source 2.
MIC: Adjust the level of audio input from the microphone.

2 Move the AUX 2/MIC fader to adjust the audio input level.

The further up the fader is, the higher the audio level.

Notes

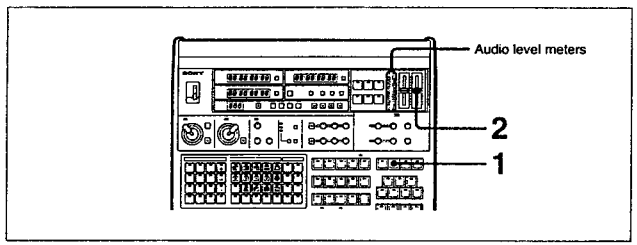
- The left (L) and right (R) auxiliary source levels are adjusted together. They cannot be adjusted separately.
- Microphone input is monaural.

For more information about the flow of audio signals see page A-7.

1-34

Adjusting audio output levels

To adjust the level of all output from the PGM 1/2 AUDIO L/R OUTPUT connectors



Adjusting the level of all output from the PGM 1/2 AUDIO L/R OUTPUT connectors

1 Press the PGM button in the MONITOR section, lighting it, to select program signals for output to the main monitor.

2 While monitoring the level meters in the audio mixer section, move the MASTER fader to adjust the level.

The further up the fader is, the higher the audio level.

Note

The left (L) and right (R) channels are adjusted together. They cannot be adjusted separately.

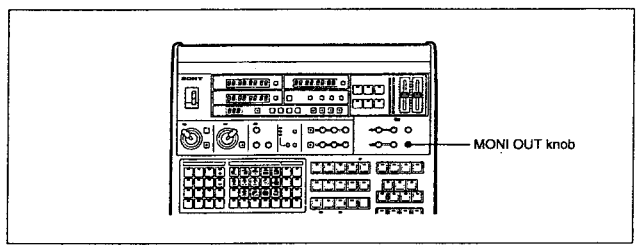
For more information about the flow of audio signals see page A-7.

To adjust the level of output from the MONITOR AUDIO L/R OUTPUT connectors

Rotate the MONI OUT knob in the AUDIO INPUT LEVEL section clockwise to increase the level, and counterclockwise to decrease it.

Note

The left (L) and right (R) auxiliary source levels are adjusted together. They cannot be adjusted separately.

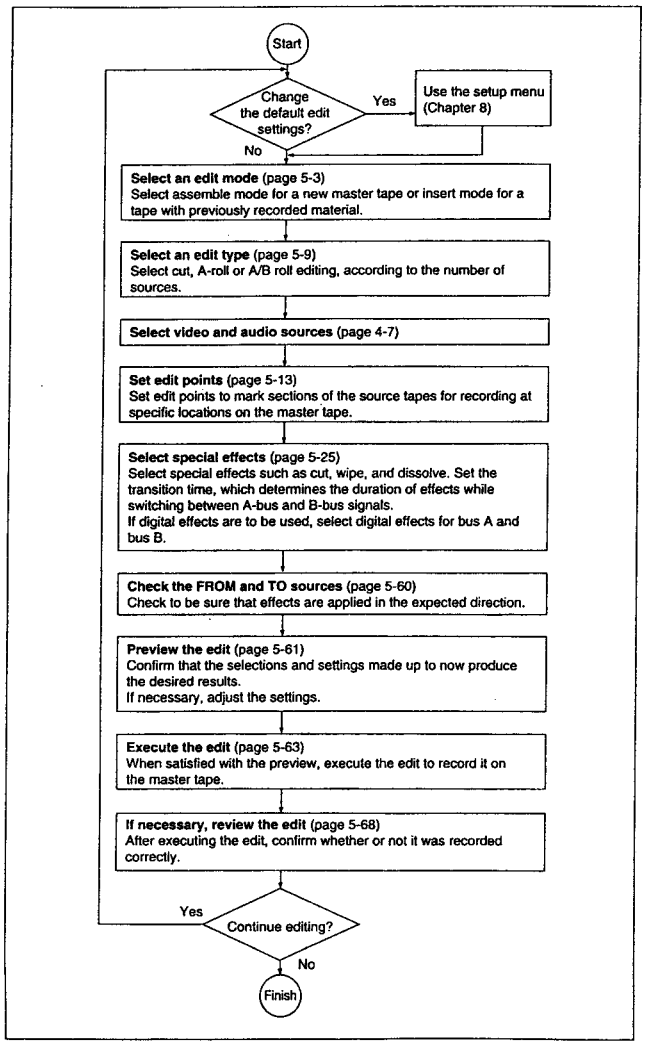


Adjusting the level of output from the MONITOR AUDIO L/R OUTPUT connectors

For more information about the flow of audio signals see page A-7.

Common Editing Procedures

The following is a flowchart of basic operations which are common to every editing session. See the page numbers in parentheses for detailed descriptions of each operation.



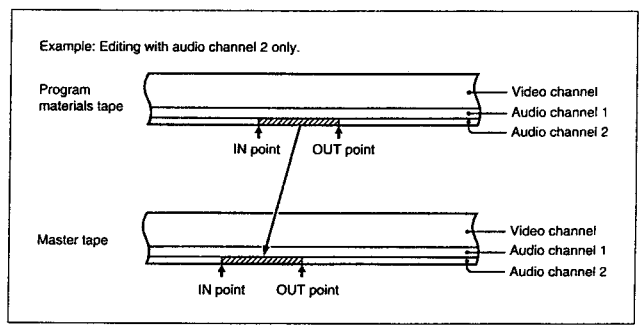
Flowchart of a typical editing session

Selecting an Edit Mode

This section describes the unit's edit modes and explains when to select them.

Insert Mode

Select insert mode when you want to insert program material at specific points on a previously recorded tape. You can insert video and audio simultaneously, video only, or audio only. You can also specify channel 1 audio, channel 2 audio, or both. Unlike assemble mode editing, insert mode editing does not affect sections of the tape beyond the recorder OUT point, because the unit switches from recording mode to playback mode as soon as the OUT point is reached.
Insert mode is selected by default when you turn the unit on.



Insert mode editing

Select insert mode when you wish to:
- record video and audio over unneeded sections of a previously recorded tape.
- insert music and narration into a tape containing an edited video program.
- insert video into a tape containing an edited audio program.

Note

Tapes with nothing at all recorded on them cannot be used as master tapes in insert mode editing. Normally, master tapes should be prepared by recording black burst signals in advance.

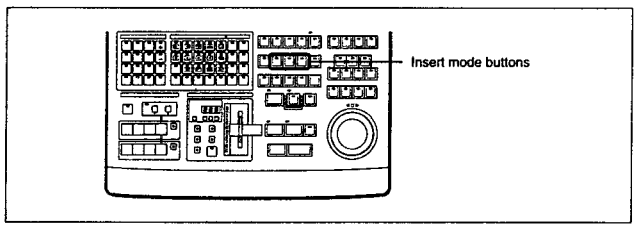
For details, refer to the handbook supplied with this unit.

Selecting insert mode

Select the channel(s) to edit by pressing the insert mode buttons (V, A1, A2) in the EDIT MODE section of the control panel, turning them on.

V button: Edit the video channel.
A1 button: Edit audio channel 1.
A2 button: Edit audio channel 2.

You can press several buttons to edit multiple channels.



Selecting insert mode channels

To cancel a channel selection

Press the corresponding insert mode button, turning it off.

To exit insert mode

Press all of the lit insert mode buttons.
When you press the last lit button, instead of going off it begins to flash, along with the other two insert mode buttons. The ASMBL button also begins to flash. This means that no edit mode is currently selected.

Time code insert mode

Use this mode to add time code to tapes with previously recorded audio or video.

For details, see "Recording Time Code — Time Code Insert" (page 6-22).

Split mode

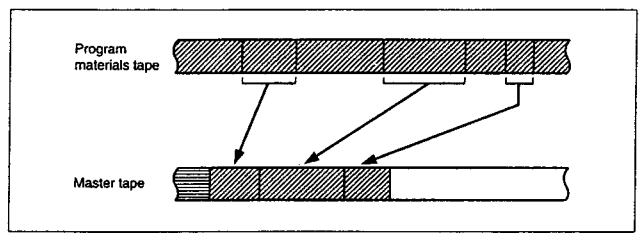
You can set independent IN points for audio and video.

For details, see "Settting Independent Video and Audio IN Points — Split Editing" (page 6-8).

Assemble Mode and First Edit Mode

Assemble mode

Select assemble mode when you want to record sequentially from the start of a master tape. Video and audio are recorded on the master tape together with control and time code signals. If time code signals have already been recorded on the master tape, then the newly recorded time code signals will be recorded in sequence with the existing signals.
Assemble mode is convenient when using a new tape as the master tape.



Assemble mode editing

Notes on assemble mode editing

- When an assemble edit is executed for the first time on a master tape, the unit expects to find CTL signals recorded on the tape from the preroll point or earlier up to and including the IN point. If CTL signals have not yet been recorded on the tape, execute a first edit before selecting assemble mode.

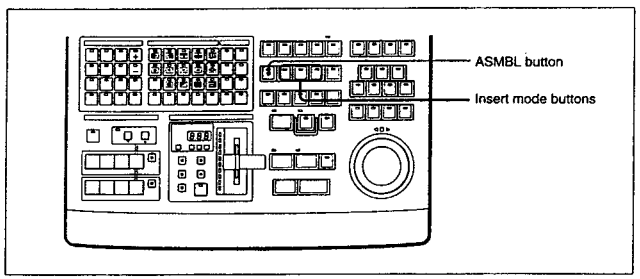
  For details, see "First edit mode" (page 5-7).

- If you begin an assemble edit at a point midway though an already recorded tape, signals will be erased across the entire width of the tape for about two seconds after the recorder's OUT point. Both video and audio signals recorded in this two-second section will be lost. If you wish to avoid this, select insert mode instead of assemble mode.

Selecting an Edit Mode

Selecting assemble mode

Press the ASMBL button in the EDIT MODE section of the control panel, turning it on.
If any insert mode buttons (V, A1, A2) are lit, press them to turn them off before pressing the ASMBL button.



Selecting assemble mode

To exit assemble mode

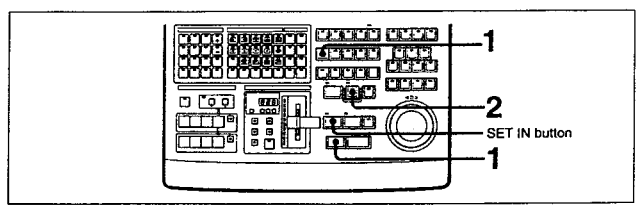
Press the ASMBL button, turning it off, or press one of the insert mode buttons (V, A1, A2), turning it on.

First edit mode

If there is nothing at all recorded on the master tape, you will be unable to execute even an assemble edit. This is because the unit needs to find control signals on the master tape, at least around the edit IN point, in order to synchronize the tapes.
When using a blank tape for the first time, select first edit mode to perform an initializing assemble edit. Black burst signals, CTL signals, and time codes will be recorded for about twelve seconds plus the preroll time from the beginning of the tape.
After executing a first edit, the unit automatically enters assemble mode.

Executing a first edit

Proceed as follows to execute a first edit.



Editing in first edit mode

1 In the EDIT MODE section, press the 1ST EDIT (=SHIFT+ASMBL) button after verifying that:
- the ASMBL button is lit, or
- the ASMBL button and insert mode buttons (V, A1, A2) are flashing.

If any insert mode buttons are lit, press to turn them off, until they begin flashing together with the ASMBL button.
When you press the 1ST EDIT (=SHIFT + ASMBL) button, it begins flashing more rapidly than normal.

2 Press the AUTO EDIT/END button in the AUTO CONTROL section.
The recorder begins to run. Black burst signals, CTL signals, and time code signals are recorded as follows from the beginning of the tape to just beyond the IN point, a length sufficient for synchronization.
- **Before the IN point:** 10 seconds, plus the preroll time selected under setup menu item 102 PREROLL TIME.
  For details, see Chapter 8.
- **After the IN point:** 2 seconds

1-38

To set an IN point time code other than 00:00:00:00

After step 1, press the MARK IN button in the TIME MARK section, or press the SET IN (=SHIFT + MARK IN) button and enter the desired time code with the numeric keypad.

For details, see "Setting edit points with the numeric keypad" (page 5-15).

About time code and control signals

Under setup menu item 104 EDIT REFERENCE, you can specify whether time code or CTL signals shall be used as tape positioning information. The unit is factory preset to use longitudinal time code (LTC, time code recorded along the length of the tape).

Notes

- With the FXE-100, time code is recorded in non-drop frame mode when setup menu item 110 FRAME CONTROL MODE is set to AUTO.
  Note that this menu item is not incorporated in the FXE-100P.
- The data selected under setup menu item 105 USER BITS is recorded in time code user bits.

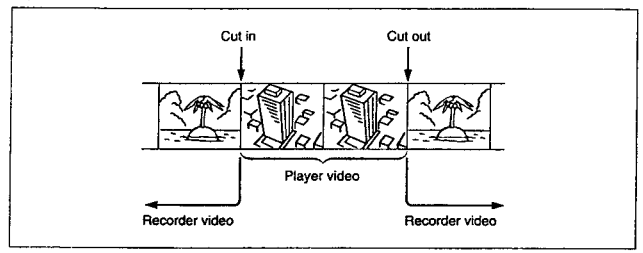
For details, see Chapter 8.

Selecting an Edit Type

Depending upon whether you are using one or two players, select the type of insert or assemble edit.

Cut Editing

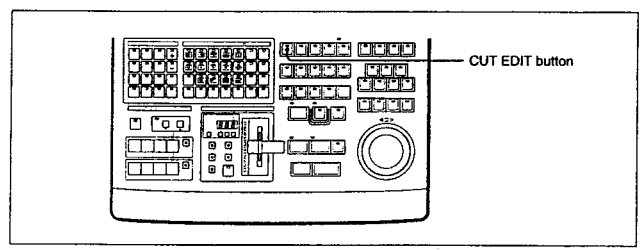
Cut editing is editing with one player, with instantaneous cuts between player and recorder signals at the recorder IN and OUT points.



Cut editing

To select cut editing

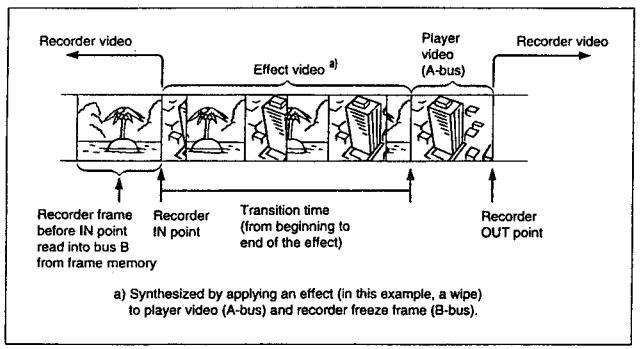
Press the CUT EDIT button in the EDIT TYPE section, turning it on.



To select cut editing

A-Roll Editing

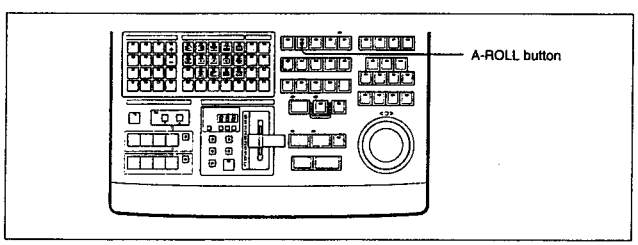
A-roll editing is like cut editing in that it uses only one player. In A-roll editing, however, the playback frame before the recorder IN point is read into bus B, making it possible to use the two signals (A-bus and B-bus) in effects such as wipes and dissolves.



A-roll editing

To select A-roll editing

Press the A-ROLL button in the EDIT TYPE section, turning it on.



To select A-roll editing

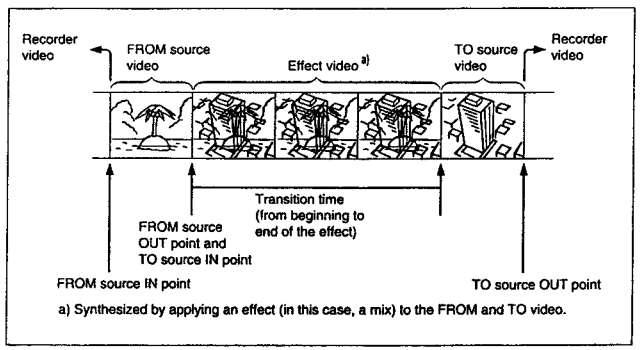
Note

The following restrictions apply in A-roll editing.

- In order to read signals from the recorder into bus B, the player source must always be selected by pressing a button in the A-BUS row of the VIDEO INPUT SELECT section.
- If the BKGD button in the B-BUS row is lit, video signals from the recorder cannot be read into bus B, meaning that the effect will use video signals from bus A and a background color from bus B. If the BKGD button is lit, press it to turn it off.

A/B Roll Editing

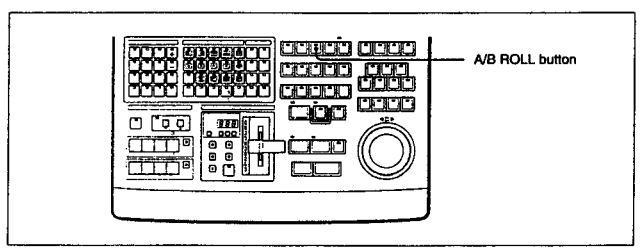
A/B roll editing allows you to record while applying effects such as wipes and dissolves to the playback of two players. The player supplying the signals which appear before the transition is called the FROM source, and the player supplying the signals which appear after the transition is called the TO source.



A/B roll editing

To select A/B roll editing

Press the A/B ROLL button in the EDIT TYPE section, turning it on.



To select A/B roll editing

Note

This unit also allows a single player to be used to switch from A-bus signals to B-bus signals. In this case too, A/B roll edit should be selected as the edit type by pressing the A/B ROLL button.

For details, refer to "Applying Digital Effects to Input Signals While Switching Between Two Scenes With One Player" in the FXE-100 handbook.

Manual Effects and Sync Roll Editing

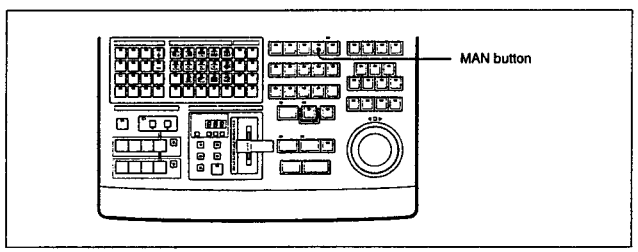
Editing with manual effects

While running two players, you can operate the controls for manual effects at the desired scene. The effects are recorded on tape but not registered in the edit decision list (EDL).

For more information about the EDL, see Chapter 7.

To select manual effect editing

Press the MAN button in the EDIT TYPE section, turning it on.



To select manual effect editing

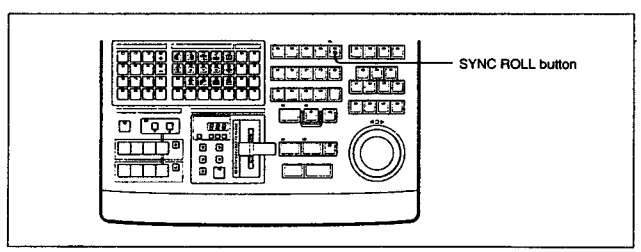
For more information about manual effects, see "Editing With Manual Special Effects" (page 6-4).

Sync roll editing

Sync roll editing is similar to manual editing, except that the effects are registered in the edit decision list. While running two players, operate the controls to achieve the desired effect at the desired scene.

To select sync roll editing

Press the SYNC ROLL button in the EDIT TYPE section, turning it on.



To select sync roll editing

For more information about sync roll editing, see page 6-2.

Setting Edit Points

This section will explain how to set and modify edit points.

Setting Edit Points

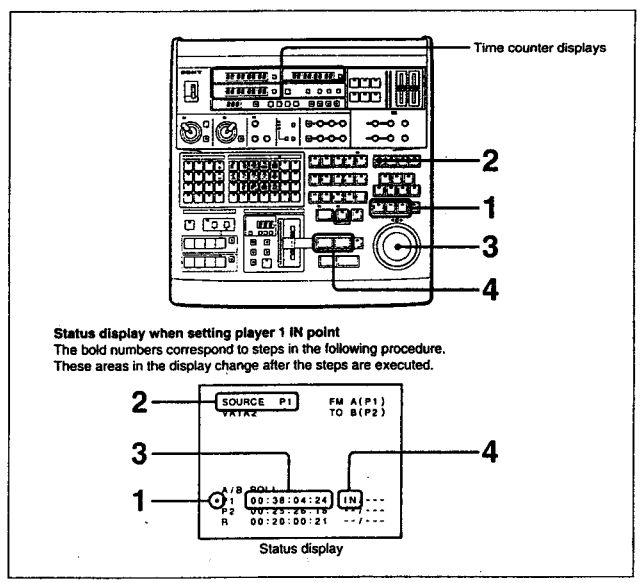
There are two ways to set an edit point:

- Search for the desired frame while viewing playback on the monitor, and then operate the controls to store the time code for that frame in the unit's memory.
- Enter the edit point data manually using the numeric keypad.

Setting edit points while viewing playback

Proceed as follows to set edit points while viewing playback on the main monitor. If the ON indicator in the SCREEN section is lit, a status display in the main monitor will be updated as you carry out each step.

For details, see "About the Status Display" (page 3-10).



Setting edit points while viewing playback

1 Select a VCR by pressing a button in the SOURCE section.
P1 button: Player 1
P2 button: Player 2
R-VTR button: Recorder

- The source button lights. The IN and OUT indicators next to the time counter display for that VCR begin to flash.
- If you have already set an IN point, the IN indicator will be lit. If you have already set an OUT point, the OUT indicator will be lit. In this case, you can update the edit points by executing steps **2**, **3** and **4**.

Status display
Shows ∗ in front of the selected VCR.

2 Press the SOURCE button in the MONITOR section.
The button lights, and playback from the VCR selected in step **1** appears in the main monitor. You can skip this step if you have connected a monitor for each VCR.

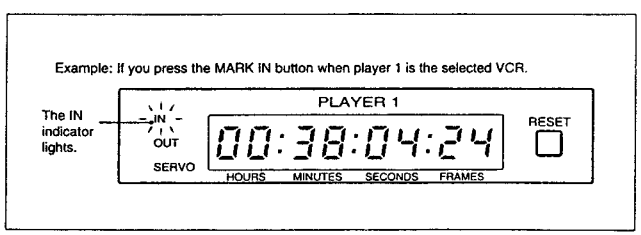
Status display
Shows "SOURCE" in the monitor signal area, followed by the name of the selected VCR.

3 While viewing the main monitor, rotate the search dial until you find the desired frame, then stop the dial.
Time code data recorded on the tape for that frame appears in the time counter display.

For details, see "Searching for a Scene With the Search Dial" (page 4-4).

Status display
Shows the selected VCR's current tape position in the time code area.

4 Press the MARK IN or MARK OUT button in the TIME MARK section.
MARK IN: The time code in the time counter display is set as the IN point. The IN indicator stops flashing and lights.
MARK OUT: The time code in the time counter display is set as the OUT point. The OUT indicator stops flashing and lights.



Status display
Shows "IN/– – – " in the time code area.

Note

If the VCRs are not connected correctly, or if the unit was unable to read time code information, an error code will appear in the time counter display.

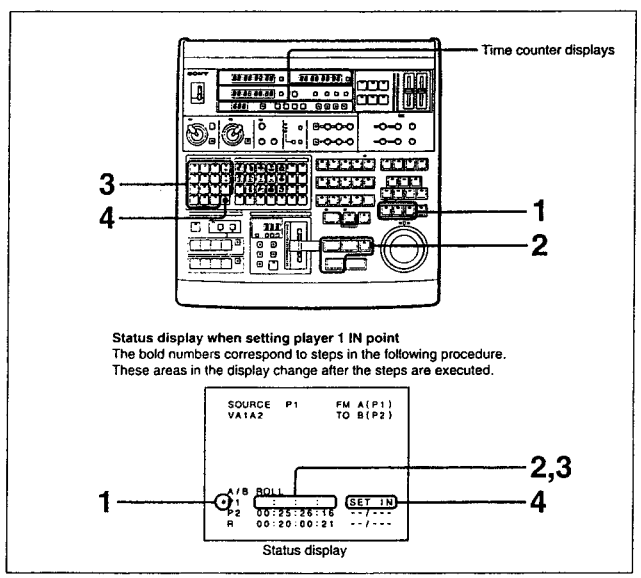
For details, see "Error Messages" in the Appendixes (page A-2).

5 Repeat steps **1** through step **4** to set the remaining edit points for each VCR.

To restore the original edit points after modifying them
Press the LAST X (=SHIFT + DUR) button in the AUTO CONTROL section.

Setting edit points with the numeric keypad

If you already know the time codes for the frames you want to set, you can enter the codes manually using the numeric keypad. Enter two out of the following three: time codes for the IN and OUT edit points, and the duration.



Setting edit points with the numeric keypad

1 Select a VCR by pressing a button (P1, P2 or R-VTR) in the SOURCE section.

- The source button lights. The IN and OUT indicators next to the time counter display for that VCR begin to flash.
- If you have already set an IN point, the IN indicator will be lit. If you have already set an OUT point, the OUT indicator will be lit. In this case, you can update the edit points by executing steps **2**, **3** and **4**.

Status display
Shows * in front of the selected VCR.

2 In the TIME MARK section, press the SET IN (=SHIFT + MARK IN) button, the SET OUT (=SHIFT + MARK OUT) button, or the SET DUR button. The units enters numeric keypad mode and all of the numeric keys light.

SET IN (=SHIFT + MARK IN): Press this button to set an IN point. The SET IN indicator lights.
SET OUT (=SHIFT + MARK OUT): Press this button to set an OUT point. The SET OUT indicator lights.
SET DUR: Press this button to set the duration. The SET DUR button lights.

Status display
Shows " : : : " in the time code area for the selected VCR, and "SET IN", "SET OUT" or "SET DUR" in the time code data type area.

3 Using the numeric keypad, enter the time code of an IN or OUT point, or the duration (up to eight digits).

Note

The most significant digits are automatically initialized to '0', so you don't need to enter all eight digits. For example, to enter the data "00 hours, 00 minutes, 35 seconds, 24 frames" you can skip the 0000 representing hours and minutes and enter only 3524.

Status display
The number is displayed as you enter it in the selected VCR's time code area.

4 Press the ENT key in the numeric keypad section.
The IN point, OUT point or duration data entered in step **3** is confirmed. For an IN point, the IN indicator next to the time counter lights. For an OUT point, the OUT indicator lights. For a duration, both the IN and OUT indicators light. As soon as you press the ENT key, the unit leaves numeric keypad mode.

Status display
The time code data type area changes as follows.
- "SET IN" → "IN/– – –".
- "SET OUT" → "– –/OUT".
- "SET DUR" → "IN/OUT" (if an IN or OUT point has been set)
  → "– –/– – –" (if no IN or OUT point has been set)

5 Repeat steps **1** through step **4** to set the remaining edit points for each VCR.

To specify a duration for auxiliary source 1
In step **1**, press the AUX button in the SOURCE section, and in step **2** press the SET DUR button.

Notes

- When you press the AUX button, "R-VTR" in the bottom line of the status display changes to "AUX".
- IN points are set automatically for auxiliary source 1.
- The SET IN (=SHIFT + MARK IN) and SET OUT (=SHIFT + MARK OUT) buttons have no effect for auxiliary source 1.

Using special keys in the numeric keypad
00 key: Allows you to enter two zeros at once.
BS key: Erases the digit currently displayed in the last column of the time counter display.
CLR key: Erases all of the digits displayed in the time counter display.

To exit numeric keypad mode immediately
Press the CLEAR button in the AUTO CONTROL section.

To restore the original data
Press the LAST X (=SHIFT + DUR) button in the AUTO CONTROL section.

Relation Between IN/OUT Points and Duration

As soon as you enter two out of the three values (IN point, OUT point, and duration), the unit automatically calculates the third.
When you change one of the values, the other two are adjusted according to the following precedence table. Items with higher numbers have lower precedence, and are the first to be adjusted.

1. Manually set IN point
2. Manually set OUT point
3. Manually or automatically set duration
4. Automatically set IN point
5. Automatically set OUT point

For example, when IN and OUT points have been set manually, and the duration is incremented by three frames using the SET DUR button and the numeric keypad. the OUT point is automatically incremented by three frames while the IN point remains unchanged.

IN point	00:01:02:03 (manual)	Duration increased by three frames →	00:01:02:03 (no change)
OUT point	00:01:04:03 (manual)		00:01:04:06 (automatic)
Duration	00:00:02:00 (automatic)		00:00:02:03 (manual)

The IN point remains unchanged, but the OUT point is automatically incremented by three frames.

Note

A period (.) appears after "IN", "OUT" or "DUR" in the status display to indicate that edit time data has been calculated automatically. This can be verified at any time by selecting a VCR and pressing the IN, OUT or DUR button to display the time data.

Relation between IN/OUT points and duration in DMC editing

When the tape is running at normal speed, the duration is equal to the OUT point minus the IN point. In DMC editing, however, this relationship does not hold unless the DMC initial speed (the speed of DT playback at the IN point) is set to +1 times normal speed.

Example 1: If a duration of 2 seconds is set manually when DMC initial speed is +1/2 (+50%) times normal speed.		
IN point	00:01:02:03	Set manually
OUT point	00:01:03:03	Calculated value = IN point + 2 seconds × 1/2 normal speed
Duration	00:00:02:30	Set manually

Example 2: If an OUT point is set manually at a point 2 seconds beyond the IN point when DMC initial speed is +1/2 (+50%) times normal speed.		
IN point	00:01:02:03	Set manually
OUT point	00:01:04:03	Set manually
Duration	00:00:04:00	Calculated value = 2 seconds + 1/2 normal speed

1-44

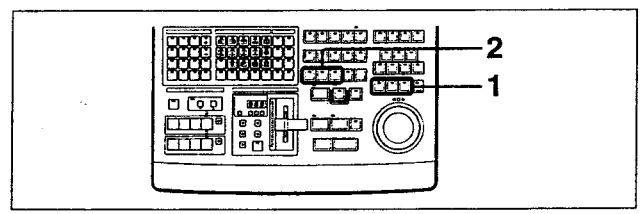
Checking, Cuing Up, Changing and Deleting Edit Points

This section explains how to check edit points, and how to change them after a preview.

For information about how to change or check edit points which have been registered in the EDL, see Chapter 7.

Checking edit points

Proceed as follows to check edit points and durations.



Checking edit point data

1 Select a VCR by pressing the appropriate button (P1. P2 or R-VTR) in the SOURCE section.

2 Depending upon the type of data you want to check, press the IN button, the OUT button or the DUR button in the AUTO CONTROL section, turning it on.

- If you pressed the IN or OUT button, the IN or OUT indicator next to the time counter display for the selected VCR lights. If you pressed the DUR button, both the IN and OUT indicators light. The edit point or duration is displayed on the main monitor and in the corresponding time counter display.

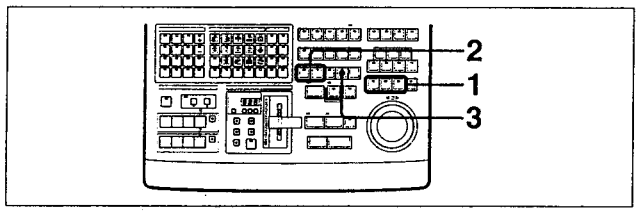
  Note

  A period (.) appears after "IN", "OUT" or "DUR" in the status display to indicate that edit time data has been calculated automatically. This can be verified at any time by selecting a VCR and pressing the IN, OUT or DUR button to display the time data.

- If an IN or OUT point has not yet been set, the corresponding indicator begins to flash and the time counter display shows "– – : – – : – – : – –".

Cuing up the tape to an edit point

You can view the scene which appears at a given edit point by cuing up the tape to that point. Proceed as follows.



Cuing up an edit point

1 Select a VCR by pressing the appropriate button (P1, P2 or R-VTR) in the SOURCE section.

2 To cue up an IN point, press the IN button in the AUTO CONTROL section, turning it on. To cue up an OUT point, press the OUT button.

The time code for the specified edit point appears in the main monitor status display and in the time counter display for that VCR.

3 Press the GO TO button in the AUTO CONTROL section, turning it on. The tape is cued up to the specified point for the specified VCR. Monitors display still playback. "GO TO" appears in the main monitor status display.

4 Repeat steps **1** to **3** to cue up edit points for other VCRs.

If you press the GO TO button without pressing the IN or OUT button
The tape is cued up to the IN point.

Changing edit points

There are two ways to change an already set edit point.

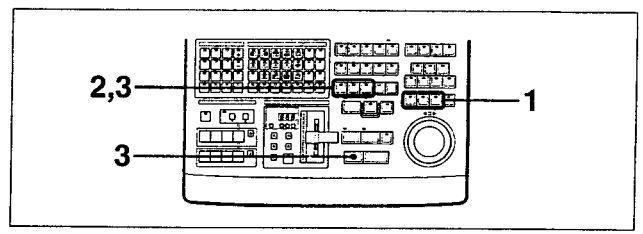
- Set the edit point again.

For details, see "Setting Edit Points" (page 5-13).

- Trim the edit point data.

Proceed as follows to trim edit point data.

Using the TRIM+ and TRIM– buttons in the AUTO CONTROL section



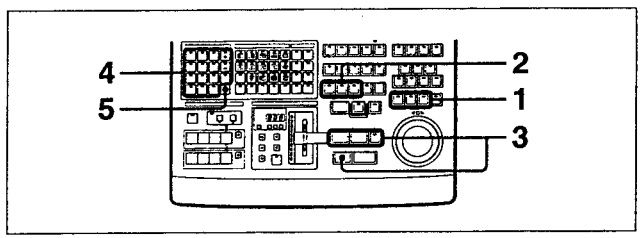
Trimming edit points with the TRIM+ and TRIM– buttons

1 Select a VCR by pressing the appropriate button in the SOURCE section.

2 Press the IN, OUT, or DUR button in the AUTO CONTROL section to display the value you want to change in the corresponding time counter display.

3 In the AUTO CONTROL section, press the TRIM+ (=SHIFT + IN) button, or the TRIM– (=SHIFT + OUT) button.
TRIM+ (=SHIFT + IN): Each time you press the button, the value increases by one frame.
TRIM– (=SHIFT + OUT): Each time you press the button, the value decreases by one frame.

Trimming edit points with the numeric keypad



Trimming edit points with the numeric keypad

1 Select a VCR by pressing the appropriate button in the SOURCE section.

2 Press the IN, OUT, or DUR button in the AUTO CONTROL section to display the value you want to change in the corresponding time counter display.

3 Depending upon the type of data, press the SET IN (=SHIFT + MARK IN) button, the SET OUT (=SHIFT + MARK OUT) button, or the SET DUR button in the TIME MARK section, putting the unit into numeric keypad mode.

SET IN (=SHIFT + MARK IN): To change IN point data. The SET IN indicator lights.
SET OUT (=SHIFT + MARK OUT): To change OUT point data. The SET OUT indicator lights.
SET DUR: To change the duration. The SET DUR button lights.

4 To increment the data, press the '+' key in the numeric keypad, or press the '–' key to decrement it. Then use the numeric keys to input the desired value (in frames).

Note

You can also enter the value before incrementing or decrementing it with the '+' and '–' keys.

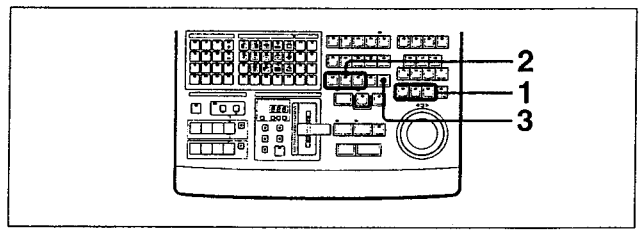
5 Press the ENT key.
The changed data is confirmed, and the unit leaves numeric keypad mode.

To return changed edit points to their original values
Press the LAST X (=SHIFT + DUR) button in the AUTO CONTROL section.

Deleting edit points

There are two ways to delete edit points.
- Press the CLEAR button in the AUTO CONTROL section.
- Use the numeric keypad.

Deleting edit points with the CLEAR button



Deleting edit points with the CLEAR button

1 Select a VCR by pressing the appropriate button in the SOURCE section.

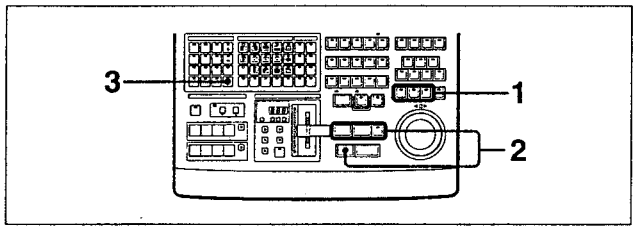
2 Press the IN, OUT, or DUR button in the AUTO CONTROL section to display the value you want to delete in the corresponding time counter display.

3 Press the CLEAR button in the AUTO CONTROL section.
The data is deleted. The IN or OUT indicator in the time counter display panel begins to flash, and "– – : – – : – – : – –" is displayed in the time counter display.

1-46

Setting Edit Points

Deleting edit points with the numeric keypad



Deleting edit points with the numeric keys

1 Select a VCR by pressing the appropriate button in the SOURCE section.

2 In the TIME MARK section, press the SET IN (=SHIFT + MARK IN) button, the SET OUT (=SHIFT + MARK OUT) button, or the SET DUR button, putting the unit into numeric keypad mode.

SET IN (=SHIFT + MARK IN): To delete an IN point. The SET IN indicator lights.
SET OUT (=SHIFT + MARK OUT): To delete an OUT point. The SET OUT indicator lights.
SET DUR: To delete the duration. The SET DUR button lights.

3 Without entering any numeric data, press the ENT button in the numeric keypad.
The data is deleted. The IN or OUT indicator in the appropriate time counter display panel begins to flash, and "– – : – – : – – : – –" is displayed in the time counter display.

To restore a deleted edit point

Press the LAST X (=SHIFT + DUR) button in the AUTO CONTROL section.

1-47

Selecting Special Effects

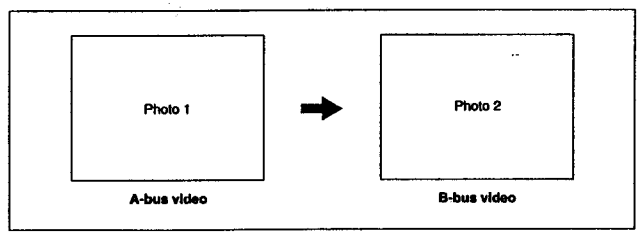
You can choose from among four kinds of special effects to switch between or combine two video signals: cut, dissolve, wipe, and key.

This section will describe how to select and combine these effects. Note that the descriptions assume that transitions begin with the fader lever, AUDIO FOLLOW button and transition indicators in the following state.

Fader lever: Pushed all the way toward side A.
AUDIO FOLLOW button: Lit
Transistion indicators: Topmost indicator on side A is lit, and all others are off.

Cut

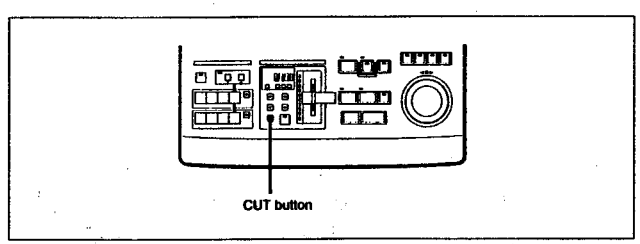
Cut is an effect which switches instantly between two video signals.
If there are audio inputs to the buses, they are cut in synchronization with the video signals.



Cut

Executing the cut effect

To excute a cut, wait for the desired scene and then press the CUT button in the EFFECT TRANSITION section. The cut takes place immediately.



Executing a cut

Notes

- When using effects such as wipe and dissolve, you can still get a cut effect by pressing the CUT button. The cut takes place as as soon as you press the button.
- In A/B roll editing, set the transition time to 0.

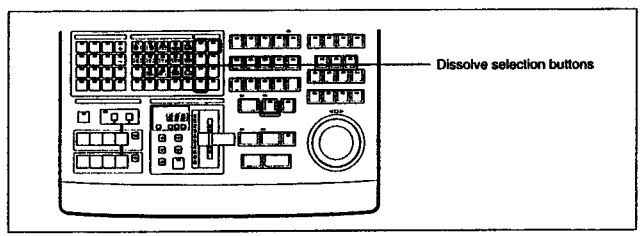
For details, see "Setting the Transition Time" (page 5-58).

Dissolve

Dissolve (or mix) is a cross-fade effect which fade outs A-bus video while fading in B-bus video. Midway through the transition, video signals from both buses overlap.
If there are audio inputs to the buses, they are cross-faded in synchronization with the video cross-fade.

Selecting a dissolve effect

Press one of the NORMAL MIX, MOSAIC MIX, POSTRZ MIX, B&W MIX and LUMINA CLIP TRANS buttons in the MIX/EFFECT section.



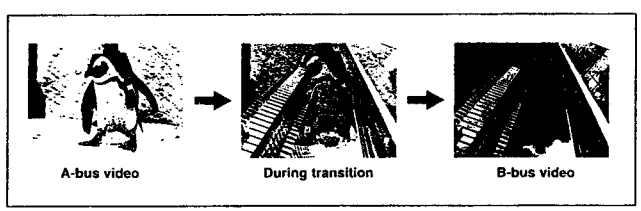
Selecting a dissolve effect

Dissolve types

The types of effect selectable with the dissolve selection buttons are as follows.

NORMAL MIX button

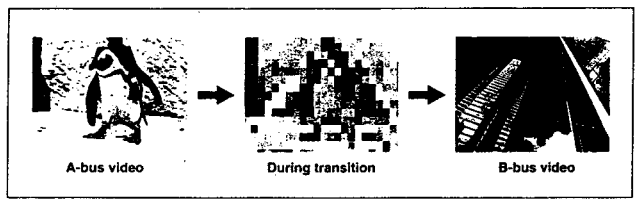
This button selects a standard dissolve effect.



NORMAL MIX dissolve

MOSAIC MIX button

A mosaic pattern appears during the transition.



MOSAIC MIX dissolve

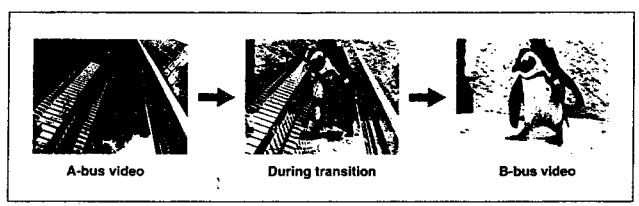
To cancel a mosaic mix, press the NORMAL MIX button.

Note

Mosaic mix cannot be combined with the following input effects.
- Multi-screen (MULTI) (*page 5-47*)
- Multi-screen 2 (MULTI 2) (*page 5-47*)
- Mosaic (MOSAIC) (*page 5-55*)
- Zoom (ZOOM) (*page 5-53*)

POSTRZ (posterization) MIX button

During the transition, hues are simplified by quantizing brightness to the levels 16→8→4→8→16, for a poster-like effect.



POSTRZ MIX dissolve

To cancel a posterization mix, press the NORMAL MIX button.

Note

A posterization mix cannot be combined with the posterization input effect (*page 5-50*).

B&W MIX button
During the transition, the image changes to black and white before returning to color.
To cancel a B&W mix, press the NORMAL MIX button.

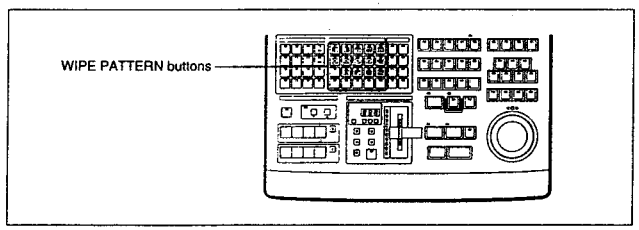
LUMINA (luminance) CLIP TRANS (transition) button
This effect provides one type of luminance key. As the transition proceeds, portions of B-bus video of progressively increasing brightness are replaced by the corresponding portions of A-bus video.
If the REVERSE button in the EFFECT TRANSITION section is lit, the brighter portions of A-bus video are inserted first, followed by the darker portions.
To cancel the luminance clip transition effect, press the NORMAL MIX button, or press the LUMINA CLIP TRANS button once more.

Wipe

A wipe is an effect which uses a geometrical pattern to replace A-bus video with B-bus video.
If there are audio inputs to the buses, they are cross-faded as the video wipe progresses.

Selecting a wipe effect

Press one of the buttons in the WIPE PATTERN section, turning it on.



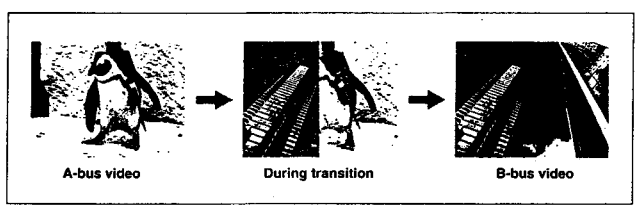
Selecting a wipe effect

Wipe patterns

The wipe patterns selectable with the buttons in the WIPE PATTERN section are as follows.

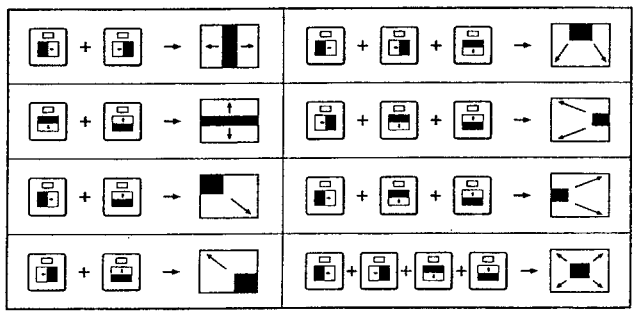
Horizontal and vertical wipe buttons ( ).
B-bus video appears on the edge of A-bus video. The pattern (B-bus video) expands in the direction indicated by the arrow, replacing A-bus video.

Example: Wipe selected with button



Wipe selected with button

A variety of patterns can be created by pressing more than one of the horizontal and vertical wipe buttons. Following are some examples.



Combined horizontal and vertical wipe patterns

Notes

- You can change the position of the pattern ( ) created by pressing all four of the buttons or by pressing the button.

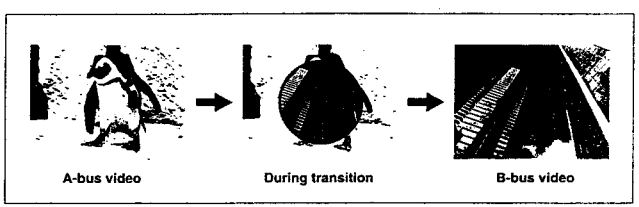
  For details, see "Changing the pattern position" (page 5-38).

- When two or more of the horizontal/vertical wipe buttons are lit, cancel a pattern selection by pressing the appropriate button, turning it off.

buttons

B-bus video appears in the center of A-bus video, and replaces A-bus video as the pattern expands.

Example: Wipe selected with button



Wipe selected with button

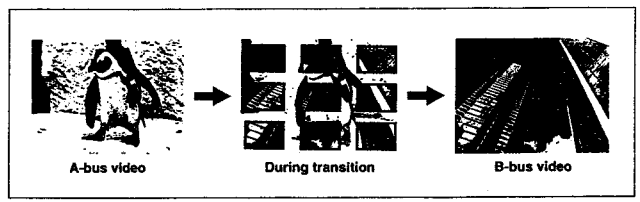
Note

You can change the position of these patterns.

For details, see "Changing the pattern position" (page 5-38).

button

A-bus video is divided into a 3 by 3 grid, and B-bus video appears in center of each of the small blocks, expanding to replace A video.



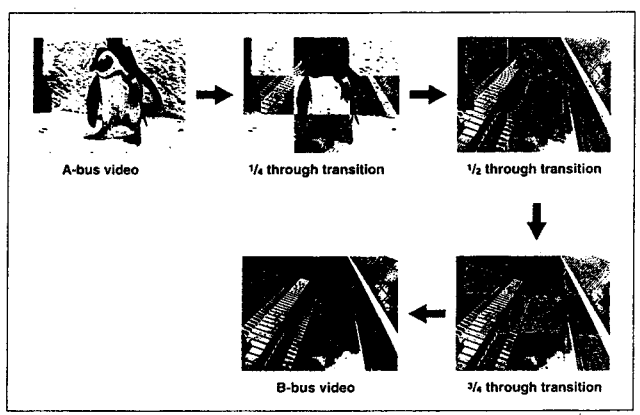
Wipe selected with button

Note

You can use this wipe in combination with the multi-screen input effect (MULTI, MULTI 2 buttons).

button

B-bus video appears as thin stripes in four locations, and expands to the right. At a stage 1/4 of the way through the transition, the screen is divided into a 3 by 3 grid, like the pattern shown on the button. Subsequent stages are shown below.



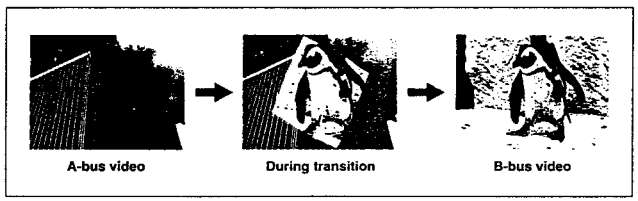
Wipe selected with button

Note

This wipe can be combined for impressive effects with the multi-screen input effect (MULTI, MULT2 buttons).

button

B-bus video appears in the center of A-bus video, and replaces A-bus video as the pattern expands. During the transition the square pattern rotates in a clockwise direction.



Wipe selected with button

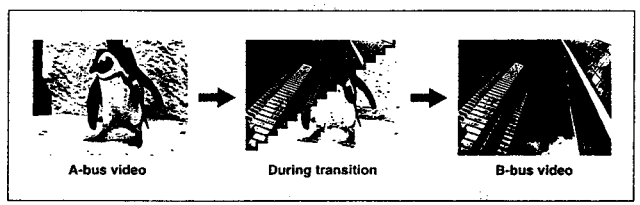
Note

You can change the position of this pattern.

For details, see "Changing the pattern position" (page 5-38).

button

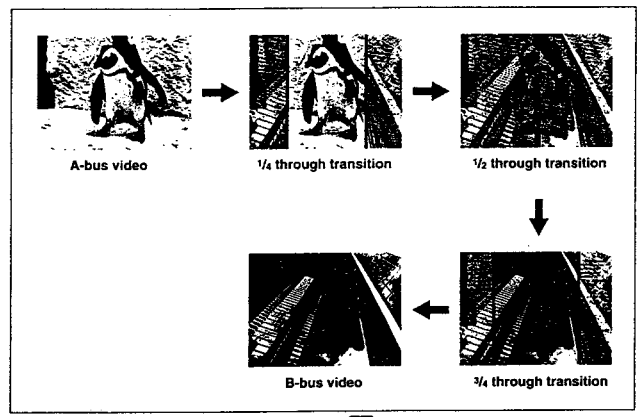
B-bus video appears in the upper left corner of A-bus video, and replaces A-bus video as the zigzag border moves toward the lower right.



Wipe selected with button

button

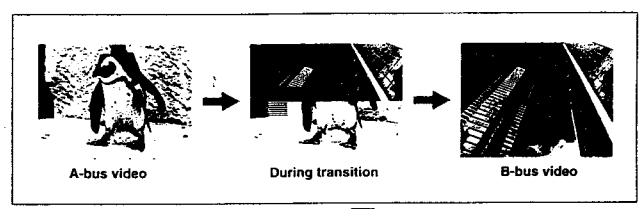
B-bus video appears as thin stripes on the left and right sides of A-bus video, and replaces A-bus video as the stripes move toward the center. Halfway through the transition, the stripes meet in the center of the screen. Subsequent stages are shown below.



Wipe selected with button

button

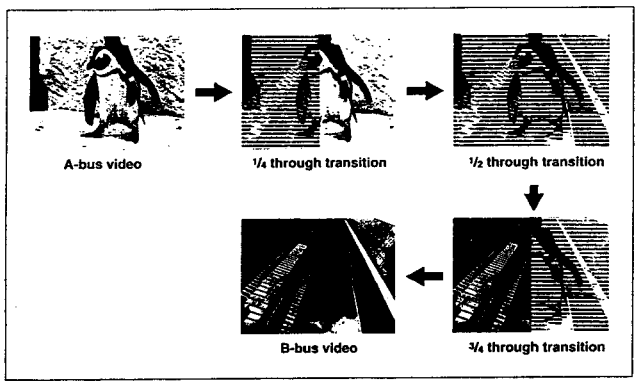
A striped band appears in the upper left corner of A-bus video. B-bus video replaces A-bus video as the band snakes through the screen in the direction shown by the arrow.



Wipe selected with button

SPLIT SLIDE button

Stripes of B-bus video appear at the edge of A-bus video, and reach the opposite side halfway through the transition. As the transition progresses, stripes of A-bus video begin to slide off the screen, finally leaving only B-bus video.



Wipe selected with the SPLIT SLIDE button

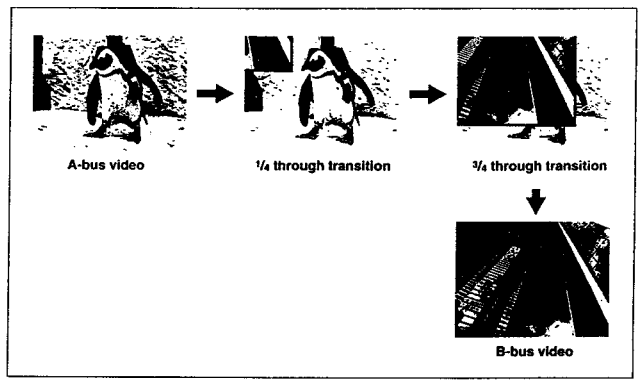
Notes

- The direction of the slide can be changed with the horizontal/vertical wipe buttons ( ).
- A split slide can be combined with a scroll wipe (*page 5-37*), although the combined transition may not be as smooth as a normal transition.

For details, see "Selecting the wipe direction" (page 5-39).

SLIDE IN button

B-bus video slides in, replacing A-bus video.



Wipe selected with the SLIDE IN button

Notes

- The direction of the slide can be changed with the horizontal/vertical wipe buttons ( ).

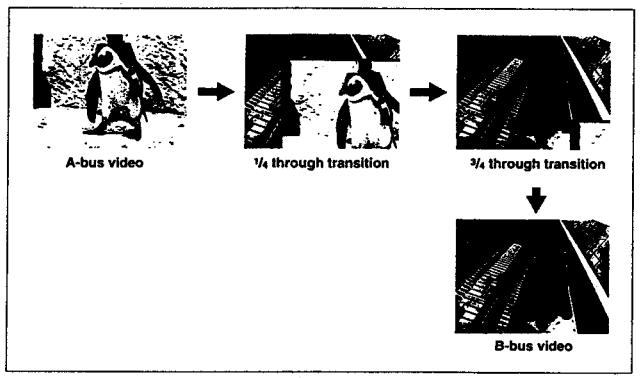
For details, see "Selecting the wipe direction" (page 5-39).

- The transition in the slide in effect may not always be as smooth as a normal transition.
- The slide in effect cannot be combined with the mosaic (*page 5-55*) and zoom (*page 5-53*) input effects.

1-52

SLIDE OUT button

A-bus video slides out, leaving B-bus video.



Wipe selected with the SLIDE OUT button

Notes

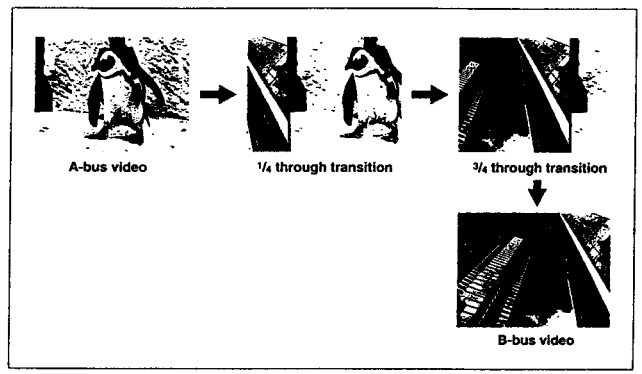
- The direction of the slide can be changed with the horizontal/vertical wipe buttons ( ).

  For details, see "Selecting the wipe direction" (page 5-39).

- The transition in the slide out effect may not always be as smooth as a normal transition.
- The slide out effect cannot be combined with the mosaic (*page 5-55*) and zoom (*page 5-53*) input effects.

SCROLL button

B-bus video slides in, while A-bus video slides out.



Wipe selected with the SCROLL button

Notes

- The direction of the scroll can be changed with the horizontal/vertical wipe buttons ( ).

  For details, see "Selecting the wipe direction" (page 5-39).

- The transition in the scroll effect may not always be as smooth as a normal transition.
- The scroll effect can be combined with a split slide wipe (*page 5-34*).
- The scroll effect cannot be combined with the mosaic (*page 5-55*) and zoom (*page 5-53*) input effects.

USER 1 and USER 2 buttons

Frequently used patterns can be assigned to these buttons, using item 201 WIPE PATTERN in the setup menu.

For details, see Chapter 8.

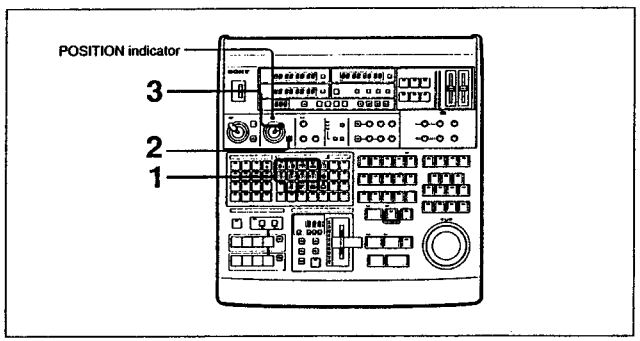
1-53

Changing the pattern position

You can change the center positions of the following patterns.

- Patterns selected with the [ ] [ ] [ ] [ ] [ ] buttons.
- The pattern ([ ]) obtained by pressing and lighting all of the [ ] [ ] [ ] [ ] buttons.

To change the positions, proceed as follows.



Changing a pattern position

1 Select a pattern with a button in the WIPE PATTERN section.
The POSITION indicator lights.

2 Press the POSITION ON/OFF button.
The button lights, and the POSITION joystick is enabled.

3 While viewing the monitor, move the joystick to adjust the pattern position.

To restore the original pattern position

Press the POSITION ON/OFF button, turning it off.

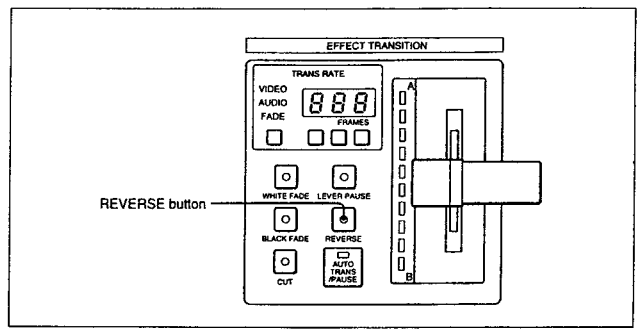
Notes

- The POSITION ON/OFF button should normally be off, except when you are intentionally changing a pattern position.
- When the POSITION ON/OFF button is on, some wipe patterns are slightly larger than normal.

Selecting the wipe direction

To reverse the wipe direction

Press the REVERSE button in the EFFECT TRANSITION section, turning it on.



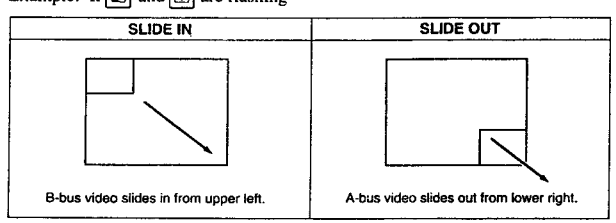
To reverse the wipe direction

To change the direction of a specific wipe

When using effects selected with the SPLIT SLIDE, SLIDE IN, SLIDE OUT and SCROLL buttons, the horizontal and vertical wipe buttons ([ ] [ ] [ ] [ ]) may be used to change the direction.

- **SPLIT SLIDE and SCROLL**
  Press one of the horizontal or vertical wipe buttons, so that it begins to flash.
- **SLIDE IN and SLIDE OUT**
  Press one of the horizontal or vertical wipe buttons, so that it begins to flash.
  If you press one each of the horizontal wipe buttons ([ ] [ ]) and the vertical wipe buttons ([ ] [ ]), the direction becomes a slant.

Example: If [ ] and [ ] are flashing

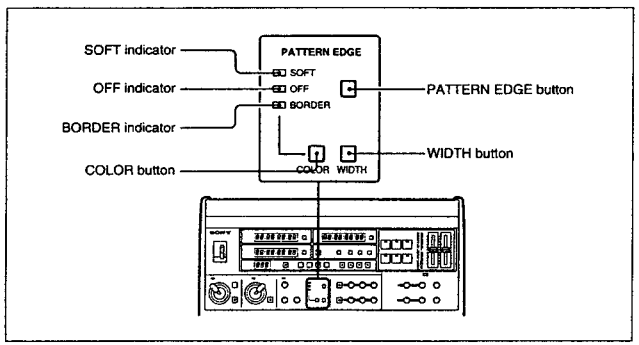


Notes

- To extinguish a flashing horizontal or vertical wipe button, press it once more.
- If you select a slide or scroll wipe with one of the horizontal or vertical wipe buttons, and then select another wipe or mix by pressing the SPLIT SLIDE, SLIDE IN, SLIDE OUT or SCROLL button, the most recently pressed horizontal or vertical wipe button starts to flash.

Adjusting pattern edges

Except in the case of wipes selected with the [▦], [▦] and [▦] buttons, it is possible to adjust the pattern edge at the border between A-bus and B-bus signals. Use the controls in the PATTERN EDGE section.



Adjusting pattern edges

To make the edge softer

Press the PATTERN EDGE button, lighting the SOFT indicator.

To make the edge sharper

Press the PATTERN EDGE button, lighting the OFF indicator.

To give the edge a colored border

Press the PATTERN EDGE button, lighting the BORDER indicator, and then press the COLOR button to select one of the 15 border colors. The colors change in the opposite order if you hold down the SHIFT button while pressing the COLOR button.

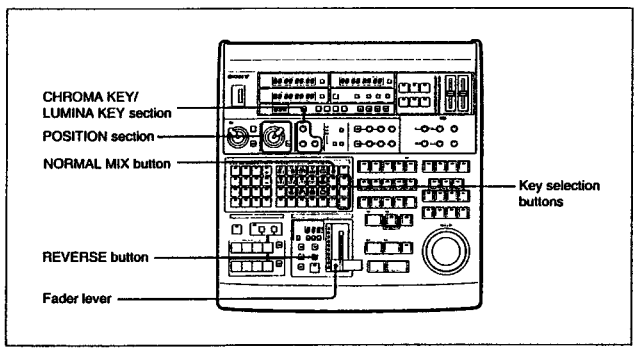
To change the border width

Press the PATTERN EDGE button, lighting the BORDER indicator, and then press the WIDTH button to change the width in three steps.

Key

This effect removes certain portions of B-bus video, replacing them with A-bus video.

The following controls are used in key effect operations.



Key effect controls

Selecting a key effect

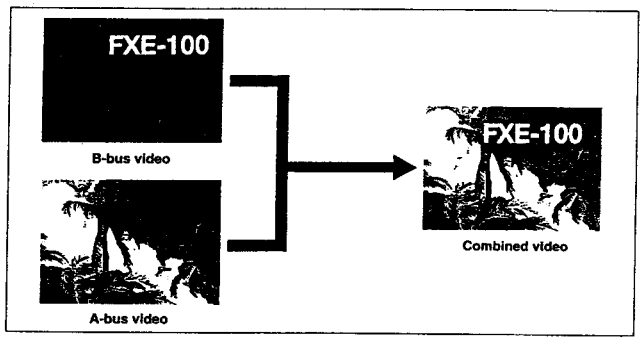
To select a key effect, pull the fader lever all the way down to the B side and press one of the key selection buttons (LUMINA KEY, CHROMA KEY or P IN P) in the MIX/EFFECT section, turning it on.

Key types

The effects selectable with the key selection buttons are as follows.

LUMINA (luminance) KEY button

Portions of B-bus video whose luminance (brightness) is equal to or higher than a specified reference level are replaced by A-bus video.



Luminance key

The reference luminance level is specified using knobs in the CHROMA KEY/ LUMINA KEY section.

- For bright sections of the video, use the CLIP/CLIP HIGH knob.
- For dark sections, use the GAIN/CLIP LOW knob.

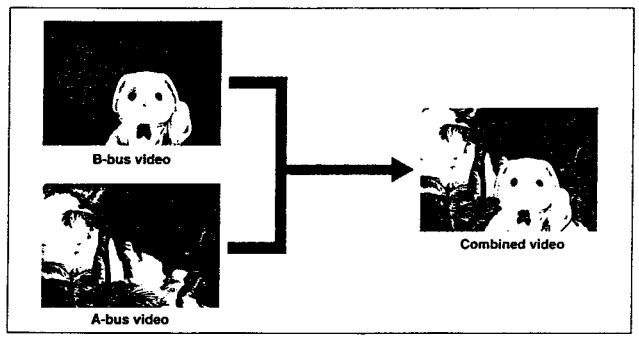
To cancel the luminance key effect, press the NORMAL MIX button, or press the LUMINA KEY button once more.

Note

The luminance key effect can be used in combination with SLIDE IN or SLIDE OUT wipes.

CHROMA KEY button

Portions of B-bus video of a specified color are replaced by A-bus video.



Chroma key

The reference color is specified using knobs in the CHROMA KEY/LUMINA KEY section.

- Specify the hue with the HUE knob.
- Specify the saturation with the CLIP/CLIP HIGH knob.
- To adjust the brightness of the inserted video (A-bus video), use the GAIN/CLIP LOW knob.

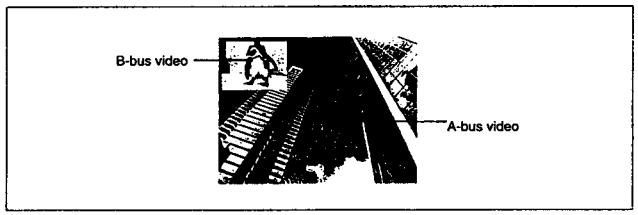
To cancel the chroma key effect, press the NORMAL MIX button, or press the CHROMA KEY button once more.

Note

When the chroma key effect is selected, the zoom input effect cannot be applied to B-bus video.

1-56

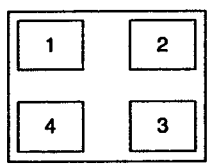
P IN P (picture-in-picture) button
B-bus video is reduced to 1/3 normal size both horizontally and vertically, and inserted into A-bus video.



Picture in picture

There are two ways to specify the position at which B-bus video will be inserted.

- Press the lit P IN P button while holding down the SHIFT button.



Each time the button is pressed, B-bus video changes position in the order 1→2→3→4→1...
(In the actual picture, the reduced video will be slightly further left than the positions shown.)

- Press the POSITION ON/OFF button in the POSITION section, turning it on, and adjust the position with the POSITION joystick.

To cancel the picture-in-picture effect, press the NORMAL MIX button or press the P IN P button once more.

Notes

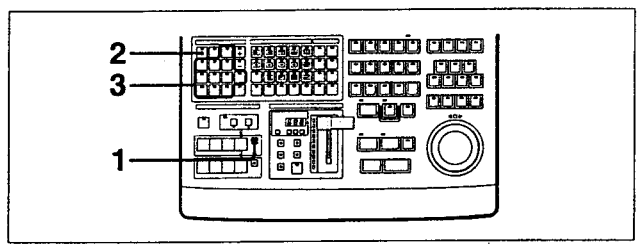
- When the P IN P button is lit, wipe patterns selected with the [1], [2], [3] and [4] buttons appear in the reduced video.
- Picture-in-picture video consists of a single field, so the B-BUS and FIELD/FRAME buttons in the INPUT EFFECT section light automatically when the P IN P button is lit.
- When the P IN P button is lit, the following input effects cannot be applied to B-bus signals.
  - Multi-screen (MULTI) (*page 5-47*)
  - Multi-screen 2 (MULTI 2) (*page 5-47*)
  - Mosaic (MOSAIC) (*page 5-55*)
  - Zoom (ZOOM) (*page 5-53*)
  - Picture trail (PIX TRAIL) (*page 5-49*)

Input Effects

In addition to video switching effects such as wipes, you can apply digital effects to bus signals with the buttons in the INPUT EFFECT section. These effects may be applied independently to bus A and bus B.

Proceed as follows to select digital effects for each bus.

Example: Selecting input effects for bus A



Selecting digital effects for bus A

1 Press the A-BUS INPUT EFFECT ON/OFF button in the VIDEO INPUT SELECT section, turning it on.

2 Press the A-BUS button in the INPUT EFFECT section, turning it on.

3 Press the INPUT EFFECT button corresponding to the desired effect. You can press several buttons for combined effects.

For more information about combined effects, see "Combined input effects" (page 5-56).

Follow the same procedure to select input effects for B-bus video.

Note

If setup menu item 306 INPUT EFFECT AUTO SELECT has been set to ON, input effects are applied automatically to the bus selected by the fader lever. The A-BUS and B-BUS buttons in the INPUT EFFECT section are disabled and do not light when pressed.

For details, see Chapter 8.

1-57

Freeze

This effect reads a video frame into a frame memory buffer, and outputs a still picture (freeze frame) consisting of the contents of frame memory. Digital effects such as monotone and mosaic may be applied to the frame memory output.

To select the freeze effect

Press the FREEZE button, turning it on.

About frame freeze and field freeze

When the FREEZE button lights, the FRAME/FIELD button lights automatically. While it is lit, the freeze video output consists of a single field (the first of the two fields in the frame), which may reduce blurring if there is rapid motion in the picture.

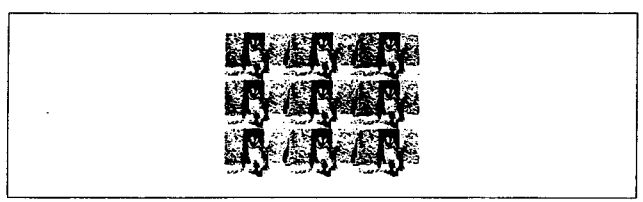
To select output of a complete frame (two fields), press the FRAME/FIELD button, turning it off.

To return to normal playback

Press the FREEZE button, turning it off, or press the RESET button, turning it on.

Multiple screens

The screen is split into a 3 by 3 grid, with reduced video in each window.



Multiple screens

To select the multi-screen effect

Press the MULTI or MULTI 2 button.

The button lights, and moving video reduced to 1/3 normal size both vertically and horizontally appears in the upper left corner.

- You can change the position of the moving video by pressing the '+' and '–' keys in the numeric keypad.
- Multi-screen effects can be combined with the strobe effect.

When the '+' and '–' keys are pressed

When the MULTI button is lit

1	2	3
4	5	6
7	8	9

+ key

When the '+' key is pressed for the first time, the video in block 1 changes to a still picture and the video in block 2 begins to move. Each time the key is pressed, the moving video moves to the next block, in the order shown at left. When the moving video reaches block 9, pressing the '+' key stops motion in all blocks. Press it again and the video in block 1 starts to move.

1	9	8
7	6	5
4	3	2

– key

When the '–' key is pressed for the first time, the video in block 1 changes to a still picture and the video in block 2 begins to move. Each time the key is pressed, the moving video moves to the next block, in the order shown at left. When the moving video reaches block 9, pressing the '–' key makes the video in block 1 start to move. Press it again and the video stops in all blocks.

When the MULTI 2 button is lit

1	2	3
8	9	4
7	6	5

+ key

The effect is the same as the MULTI effect, except that the order is as shown at left.

1	9	8
3	2	7
4	5	6

– key

The effect is the same as the MULTI effect, except that the order is as shown at left.

When the STROBE button is pressed

When the MULTI button is lit

1	2	3
4	5	6
7	8	9

STROBE plus MULTI effect

Pressing the STROBE button while the MULTI button is lit causes the blocks shown at left to change to still video, one after the other in the order shown. When block 9 is reached, new still pictures begin to appear from the upper left block in the order 1→2→3..., repeating the process indefinitely until the STROBE button is pressed once more, turning it off.
The '+' and '–' keys can be used to adjust the strobe interval. Pressing the '+' key increases the interval and pressing the '–' key decreases it. When the maximum or minimum interval is reached, the '+' or '–' key begins to flash.

When the MULTI 2 button is lit

1	2	3
8	9	4
7	6	5

STROBE plus MULTI 2 effect

Pressing the STROBE button while the MULTI 2 button is lit causes the blocks shown at left to change to still video, one after the other in the order shown. The strobe effect ends when block 9 is reached. Block 9 changes to a moving picture, and the other 8 blocks remain as still pictures.
You can adjust the strobe interval with the '+' and '–' keys before you execute an edit using this effect.

To return to normal playback

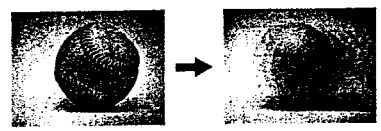
Press the MULTI or MULTI 2 button, turning it off, or press the RESET button, turning it on.
After returning to a normal picture, the MULTI or MULTI 2 button can be pressed again to recall the most recent multi-screen picture. The button lights, and a moving picture automatically appears in the most recently moving block.

Notes

- The multi-screen effect can be combined with wipes selected with the [ ] and [ ] buttons (*page 5-31*), for impressive multi-screen wipes.
- The multi-screen effect cannot be combined with the mosaic mix effects (*page 5-27*). Nor can it be applied to the reduced picture (B-bus video) in the picture-in-picture effect (*page 5-44*).

Picture trail

This effect creates a trail of images behind a moving subject.



Normal video

Picture trail

To select the picture trail effect

Press the PIX TRAIL button, turning it on.

To return to normal playback

Press the PIX TRAIL button, turning it off, or press the RESET button, turning it on.

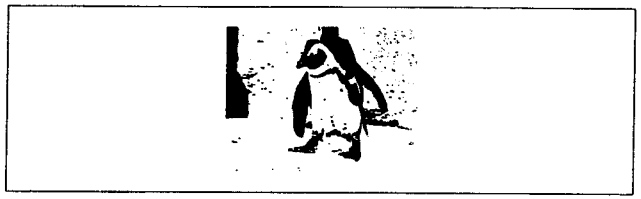
Notes

- It is not possible to adjust the length of time the trailing pictures remain visible.
- The picture trail effect cannot be applied to the reduced picture (B-bus video) in the picture-in-picture effect (*page 5-44*).

1-59

Posterization

This effect produces a picture with simplified hues, like a poster. The picture is simplified by quantizing brightness to 16, 8 or 4 levels.



Posterization

To select the posterization effect

Press the POSTRZ button, turning it on.

To adjust the number of levels

To reduce the number of levels (increase the posterization effect), press the '+' key in the numeric keypad. To increase the number of levels, press the '–' key.

To return to normal playback

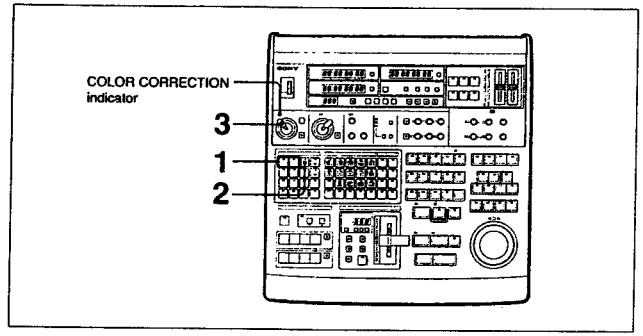
Press the POSTRZ button, turning it off, or press the RESET button, turning it on.

Note

The posterization input effect cannot be combined with a posterization dissolve.

Color correction

By using the color balance controls, you can adjust the white balance and change the overall tonal balance of the picture. Proceed as follows.

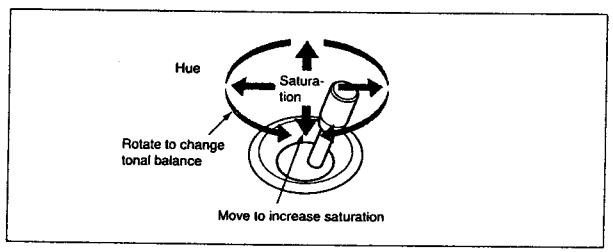


Performing color correction

1 Select the object of the color correction by pressing the A-BUS button or B-BUS button in the INPUT EFFECT section.

2 Press the COLOR CORRECT button in the INPUT EFFECT section, turning it on.
The COLOR CORRECTION indicator lights to show that the controls in the COLOR CORRECTION section are enabled.

3 While viewing the monitor, move the joystick to perform color correction.



1-60

About the correction range

The color correction range (sensitivity of the joystick) can be set to one of two steps under item 205 COLOR CORRECTION ADJUSTMENT WIDTH in the setup menu.

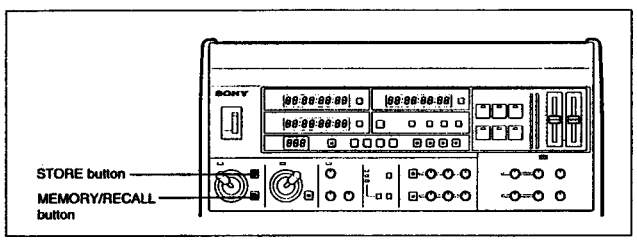
For details, see Chapter 8.

When adjusting the white balance

Find a portion of the picture that should appear as pure white. Then, while viewing the monitor, move the joystick until the white portion is shown as pure white.

To save the adjusted color values in memory

Press the STORE button together with the MEMORY/RECALL button.



Saving adjusted color values in memory

To load adjusted values from memory

Press the MEMORY/RECALL button only, turning it on. To return to the state before the values were recalled, press the button once more, turning it off.

To return to the original color balance

Press the COLOR CORRECT button, turning it off, or press the RESET button, turning it on.

Monotone

This effect produces a monotone (monochrome) picture.

To select the monotone effect

Press the MONOTONE button, turning it on.
Pressing the COLOR CORRECT button as well, turning it on, allows you to adjust the monotone color with the controls in the COLOR CORRECTION section.

To return to normal playback

Press the MONOTONE button, turning it off, or press the RESET button.

Strobe

This effect freezes the picture at selected frame intervals.

To select the strobe effect

Press the STROBE button, turning it on.

To select the frame interval

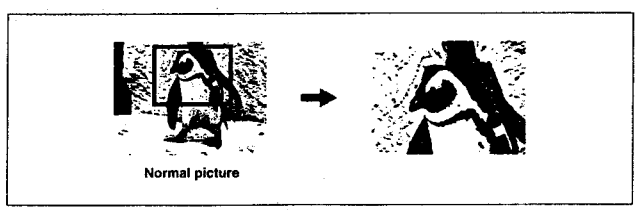
Press the '+' key in the numeric keypad to increase the frame interval, and the '–' key to decrease it. When the maximum or minimum interval is reached, the '+' or '–' key begins to flash.

To return to normal playback

Press the STROBE button, turning it off, or press the RESET button, turning it on.

Zoom

This effect expands a selected area of the picture to fill the entire screen.



Zoom

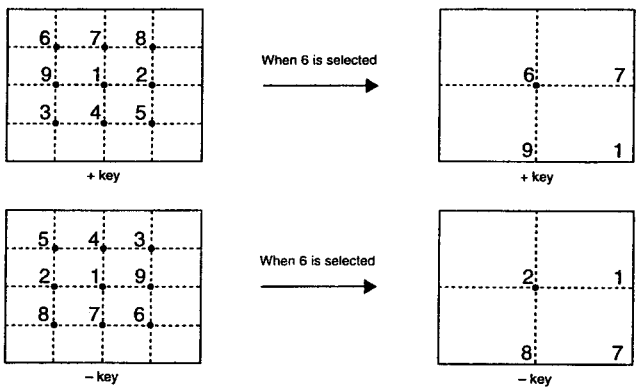
To select the zoom effect

Press the ZOOM button, turning it on.

1-61

To select the zoom center

Press the '+' or '–' key. Pressing the key selects a set of four zoom blocks, centered around the dots numbered 1 to 9 in the illustrations below. The four blocks around the dots are doubled in size vertically and horizontally.



(In the actual picture, zoom centers will be sightly to the left of the positions shown by the dots in the illustrations above.)

To return to normal playback

Press the ZOOM button, turning it off, or press the RESET button, turning it on. If you press the ZOOM button again, the most recently selected blocks automatically expand to fill the screen.

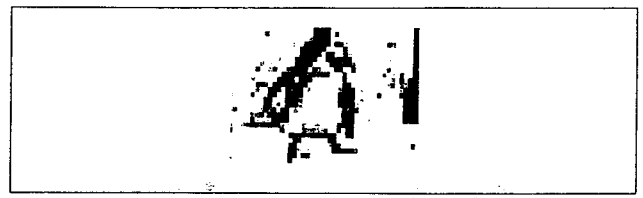
Note

The zoom effect cannot be combined with the following wipes.
- SLIDE IN (*page 5-35*)
- SLIDE OUT (*page 5-36*)
- SCROLL (*page 5-37*)

The zoom effect cannot be applied to the following kinds of video.
- The reduced picture (B-bus video) in the picture-in-picture effect (*page 5-44*).
- B-bus video in the CHROMA KEY effect (*page 5-43*).

Mosaic

This effect applies a mosaic grid to the picture. The coarseness of the mosaic can be adjusted.



Mosaic

To select the mosaic effect

Press the MOSAIC button, turning it on.

To adjust the coarseness of the mosaic

Press the '+' key for a coarser grid, and the '–' key for a finer one. The coarseness can be adjusted in four steps. When the maximum or minimum level is reached, the '+' or '–' key begins to flash.

To return to normal playback

Press the MOSAIC button, turning it off, or press the RESET button, turning it on.

Note

The mosaic effect cannot be combined with the following effects.
- MOSAIC MIX (*page 5-27*)
- SLIDE IN (*page 5-35*)
- SLIDE OUT (*page 5-36*)
- SCROLL (*page 5-37*)

1-62

Combined input effects

You can combine input effects in various ways. The tables below show the results of button combinations.

Table A shows the effects obtained when one button in the INPUT EFFECT section is lit and another button is pressed.
Tables B-1 and B-2 show the effects obtained when two buttons are lit and a third button is pressed.

Note

The posterization (POSTRZ button) and monotone (MONOTONE button) effects can be combined with any other input effect. Therefore they are omitted from the tables below.

Combined input effects (A)

Pressed first / Pressed second	Field a)					Field or Frame b)	
	MOSAIC	MULTI	MULTI 2	STROBE	ZOOM	FREEZE	PIX TRAIL
MOSAIC	Off	MOSAIC	MOSAIC	MOSAIC STROBE	MOSAIC	FREEZE MOSAIC	MOSAIC PIX TRAIL
MULTI	MULTI	Off	MULTI	MULTI STROBE	MULTI	MULTI	MULTI
MULTI 2	MULTI 2	MULTI 2	Off	STROBE MULTI 2	MULTI 2	MULTI 2	MULTI 2
STROBE	MOSAIC STROBE	MULTI STROBE	MULTI 2 STROBE	Off	ZOOM STROBE	STROBE	PIX TRAIL STROBE
ZOOM	ZOOM	ZOOM	ZOOM	STROBE ZOOM	Off	ZOOM	ZOOM
FREEZE	MOSAIC FREEZE	MULTI FREEZE	MULTI 2 FREEZE	FREEZE	ZOOM FREEZE	Off	PIX TRAIL FREEZE
PIX TRAIL	MOSAIC PIX TRAIL	PIX TRAIL	PIX TRAIL	STROBE PIX TRAIL	PIX TRAIL	PIX TRAIL	Off

a) The effects are applied to field data.
b) The effects are applied to field data if the FRAME/FIELD button is lit. Otherwise they are applied to frame data.

Combined input effects (B-1)

Pressed first / Pressed second	Field a)						
	MOSAIC STROBE	MOSAIC FREEZE	MULTI STROBE	MULTI FREEZE	MULTI 2 STROBE	MULTI 2 FREEZE	STROBE ZOOM
MOSAIC	STROBE	FREEZE	STROBE MOSAIC	FREEZE MOSAIC	STROBE MOSAIC	FREEZE MOSAIC	STROBE MOSAIC
MULTI	STROBE MULTI	MULTI	Off	Off	STROBE MULTI	MULTI	STROBE MULTI
MULTI 2	STROBE MULTI 2	MULTI 2	STROBE MULTI 2	MULTI 2	Off	Off	STROBE MULTI 2
STROBE	MOSAIC	MOSAIC STROBE	MULTI	MULTI STROBE	MULTI 2	MULTI 2 STROBE	ZOOM
ZOOM	STROBE ZOOM	ZOOM	STROBE ZOOM	ZOOM	STROBE ZOOM	ZOOM	STROBE
FREEZE	MOSAIC FREEZE	MOSAIC	MULTI FREEZE	MULTI	MULTI 2 FREEZE	MULTI 2	ZOOM FREEZE
PIX TRAIL	MOSAIC STROBE PIX TRAIL	MOSAIC PIX TRAIL	STROBE PIX TRAIL	PIX TRAIL	STROBE PIX TRAIL	PIX TRAIL	STROBE PIX TRAIL

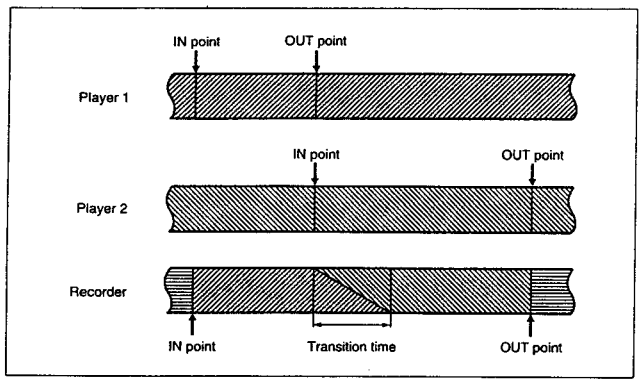
Combined input effects (B-2)

Pressed first / Pressed second	Field a)				Field or Frame b)
	STROBE PIX TRAIL	ZOOM FREEZE	MOSAIC PIX TRAIL STROBE	MOSAIC PIX TRAIL FREEZE	PIX TRAIL FREEZE
MOSAIC	STROBE MOSAIC	MOSAIC FREEZE	PIX TRAIL STROBE	PIX TRAIL FREEZE	PIX TRAIL FREEZE MOSAIC
MULTI	STROBE MULTI	MULTI	STROBE MULTI	FREEZE MULTI	MULTI
MULTI 2	STROBE MULTI 2	MULTI 2	STROBE MULTI 2	FREEZE MULTI 2	MULTI 2
STROBE	PIX TRAIL	ZOOM STROBE	MOSAIC PIX TRAIL	MOSAIC PIX TRAIL STROBE	PIX TRAIL STROBE
ZOOM	STROBE ZOOM	Off	STROBE ZOOM	ZOOM	ZOOM
FREEZE	PIX TRAIL FREEZE	ZOOM	MOSAIC PIX TRAIL FREEZE	MOSAIC PIX TRAIL	PIX TRAIL
PIX TRAIL	STROBE	PIX TRAIL	MOSAIC STROBE	MOSAIC FREEZE	FREEZE

a) The effects are applied to field data.
b) The effects are applied to field data if the FRAME/FIELD button is lit. Otherwise they are applied to frame data.

Setting the Transition Time

This section explains how to set the transition time, or duration, of special effects.



Transition time

Note

You do not need to set a transition time if you have selected cut editing by pressing the CUT EDIT button in the EDIT TYPE section.
When using dissolve or wipe effects, the effect is the same as a cut if the transition time is set to 0.

There are two ways to set the transition time.
- Use the TRANS RATE buttons in the EFFECT TRANSITION section.
- Use the numeric keypad.

Setting video and audio transition times independently

If you have selected split editing (the AUDIO SPLIT button in the EDIT MODE section is lit), you can set independent transition times for video and audio.
- To set the video transition time, press the VIDEO/AUDIO/FADE button in the EFFECT TRANSITION section until only the VIDEO indicator is lit.
- To set the audio transition time, press the VIDEO/AUDIO/FADE button until only the AUDIO indicator is lit.

For more information about split editing, see "Setting Independent Video and Audio IN Points —Split Editing" (page 6-8).

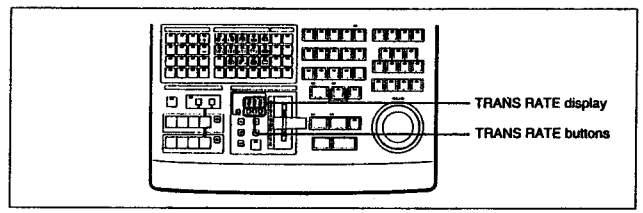
When setting the fade in/fade out transition time

Press the VIDEO/AUDIO/FADE button in the EFFECT TRANSITION section until only the FADE indicator is lit.

For more information about fade in and fade out, see "Editing With Fade In and Fade Out" (page 6-16).

Setting the transition time with the TRANS RATE buttons

The TRANS RATE buttons in the EFFECT TRANSITION section allow you to select any transition time in the range from 0 to 999 frames. The length of one frame is $^1/_{30}$ seconds (FXE-100) or $^1/_{25}$ seconds (FXE-100P).

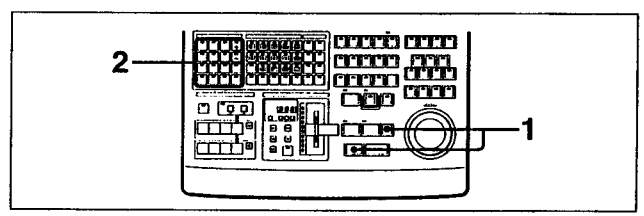


Setting the transition time with the TRANS RATE buttons

- Each time you press a TRANS RATE button, the digit in the display column above the button is incremented by 1. The digit '9' is succeeded by '0'.
- If you press a TRANS RATE button together with the SHIFT button, the display column value is decremented by 1. In this case, the digit '0' is succeeded by '9'.

Setting the transition time with the numeric keypad

You can also enter a transition time with the numeric keypad. Proceed as follows.



Setting the transition time with the numeric keypad

1 Press the SET TRANS (=SHIFT + SET DUR) button in the TIME MARK section.
The unit enters numeric keypad mode, enabling the numeric keys. The number in the TRANS RATE display goes out.

2 After entering the desired number of frames with the numeric keys, press the ENT key.
The transition time is set to the entered value, and the unit exits numeric keypad mode.

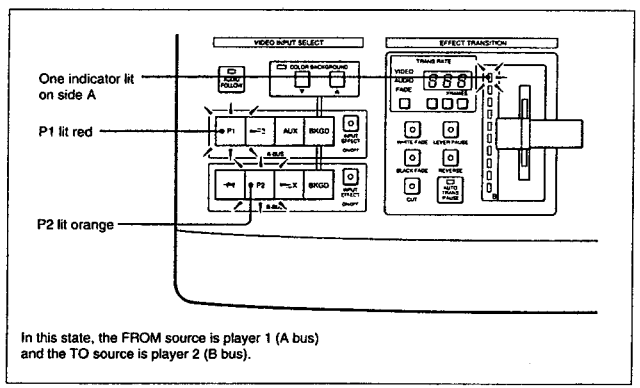
Note

In some cases, the actual transition time of the video on the monitor can be slightly shorter than the entered value, so you may wish to set it to a slightly longer value.

Checking FROM and TO Sources

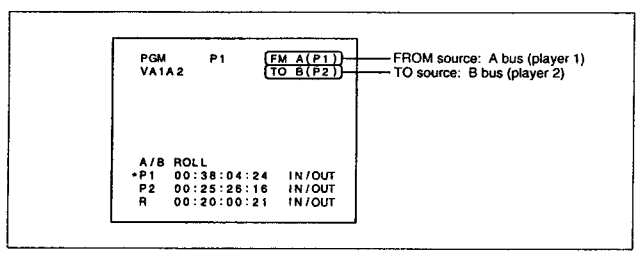
After making the necessary settings, always make a final check of the video signals of the FROM and TO sources before executing a preview or edit.
Check the transition indicators next to the fader lever (normally only one should be lit). Also check the state of the video input selection buttons or the status display on the main monitor.

Check the transition indicators and video input selection buttons



Checking FROM and TO sources on the control panel

Check the monitor status display



Checking FROM and TO sources on the monitor

To reverse the FROM and TO sources

If the FROM and TO sources are reversed, move the fader lever or press the CUT button in the EFFECT TRANSITION section to switch them.

Note

The fader lever is disabled while the AUTO TRANS/PAUSE button is lit. Before using the fader lever to reverse sources, extinguish the AUTO TRANS/PAUSE button.

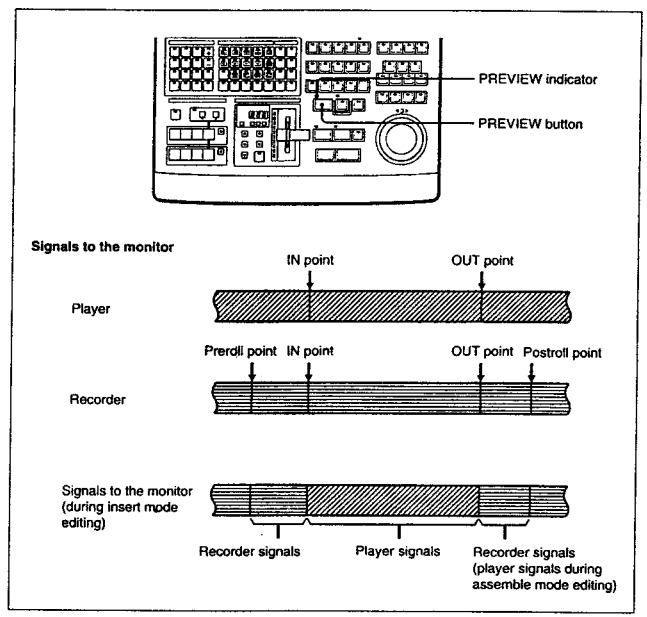
For details, see "Note on the fader lever" (page 4-13).

Preview—The Rehearsal Before Edit Execution

Instead of executing the edit as soon as you finish checking the FROM and TO sources, you can confirm the results of your edit decisions by previewing the edit on a monitor.
In a preview, a monitor connected to the recorder will display the same signals that will be recorded at execution time. You can also view these signals on the main monitor by pressing the SOURCE button in the MONITOR section, turning it on, and then selecting the recorder by pressing the R-VTR button in the SOURCE section.
When you preview the edit, control settings are not registered in the EDL. You can change or correct them as often as necessary.

Carrying out a preview

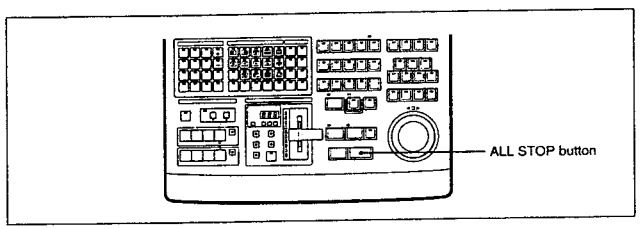
To preview the edit, press the PREVIEW button in the AUTO CONTROL section. The PREVIEW indicator above the button lights, and all of the selected VCRs run from their preroll points to their postroll points.
During the preview the following signals are output to the monitor.



Preview

To halt a preview

Press the ALL STOP button.
The PREVIEW indicator goes out and all VCRs stop.



Halting a preview

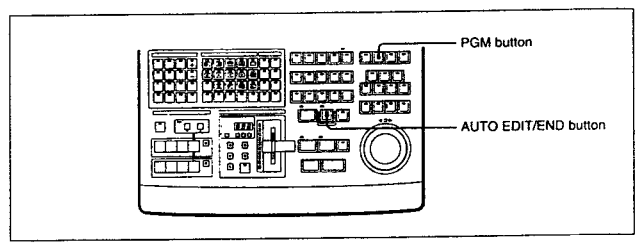
Sync grade display

During a preview, sync grade information is included in the status display.

For details, see "Sync Grade During Previews and Edit Execution" (page 5-65).

Executing the Edit

After checking the FROM and TO sources, execute the edit by pressing the AUTO EDIT/END button in the AUTO CONTROL section.
The specified VCRs are rewound to their preroll points, stop, and then begin to run in the forward direction. The AUTO EDIT/END button flashes during the preroll time, and lights when the recorder IN point is reached to indicate that recording has begun.
If you press the PGM button in the MONITOR section, turning it on, you can monitor the program video and audio signals on the main monitor.



Executing the edit

When the edit ends

- The AUTO EDIT/END button goes out, and all VCRs stop.
- The edit data is saved in the EDL. The number in the edit number display of the EDIT PGM section is incremented, and the unit is readied for a new edit.

For more information about the EDL, see Chapter 7.

If edit data has not been set correctly

An error code appears in a time counter display as soon as you press the AUTO EDIT/END button. The edit is not executed. Correct the data and repeat the edit.

If a warning sound is heard after edit execution starts

The unit leaves recording mode without registering the edit in the EDL. Warning sounds are issued in cases such as the following.

- No time code/CTL signals were found on the master tape.
- Connected equipment could not be controlled.
- Time data corresponding to edit settings could not be found on a tape.

To check the total execution time

To check the total execution time of an edit carried out on a single master tape, press the TOTAL (= SHIFT + CLEAR) button in the AUTO CONTROL section. The total time appears in the RECORDER time counter display, from the earliest recorded IN point to the last recorded OUT point. If the PGM MODE button in the EDIT PGM section is on, the total is for edits which were recorded and registered in the EDL. Otherwise it is the total for the earliest to the latest recorded edits on the tape.

To halt an edit (without registering it in the EDL)

Press the ALL STOP button.
All VCRs are stopped. The edit number is not incremented.

To halt an edit at a desired scene (and register it in the EDL)

Press the AUTO EDIT/END button, turning it off.
The edit number is incremented, and the master tape time code for the point where the button is pressed is registered as the recorder OUT point.

Sync grade display

During edit execution, sync grade information is included in the status display.

For details, see "Sync Grade During Previews and Edit Execution" (page 5-65).

Automatic settings after edit execution

After an edit is executed, some data items for the next edit are set automatically, as follows.

- **Edit mode:** The edit mode selected for the previous edit (and registered in the EDL after execution).
  However, assemble mode is selected after a first edit.
- **Edit type:** The edit type selected for the previous edit.
- **Video switching effect:** As follows, depending on the effect selected for the previous edit.

Previous edit type (selection button)	Automatically selected switching effect for next edit
Cut (CUT EDIT)	Cut
Other than cut edit (A-ROLL, A/B ROLL, MAN, SYNC ROLL)	Same as previous edit

- **Input effect:** Same as previous edit
- **Sources:** As follows, depending on sources selected for previous edit.

Previous edit type (selection button)	Automatically selected source for next edit
Cut (CUT EDIT)	Same source as previous edit
A-roll (A-ROLL)	A-bus source of previous edit
A/B roll (A/B ROLL)	TO source of previous edit
Manual effects (MAN)	
Sync roll (SYNC ROLL)	

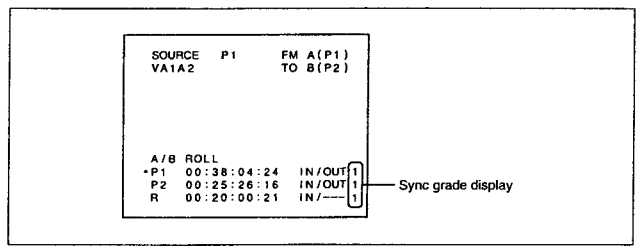
- **Edit number:** Number of previous edit plus 1.
- **Recorder IN point:** Recorder OUT point of previous edit.
- **Player IN point:** Player OUT point of previous edit.

Sync Grade During Previews and Edit Execution

During previews and automatic edits, the main monitor status display contains one-digit codes to indicate the degree of synchronizing precision between VCRs.

Note

If you set setup menu item 303 SYNC GRADE DISPLAY to OFF, this information will not be displayed.



Sync grade display

The meanings of the codes are as follows. The sync grade can be selected under item 301 SYNC GRADE in the setup menu.

Sync grade (status display)	Display code number
ACCURATE	1
+/– 1 FRAME	2
ROUGH	3
PREROLL&PLAY	4

For details, see Chapter 8.

Note

The sync grade is not displayed if setup menu item 104 EDIT REFERENCE is set to CTL.

If a VCR cannot be synchronized

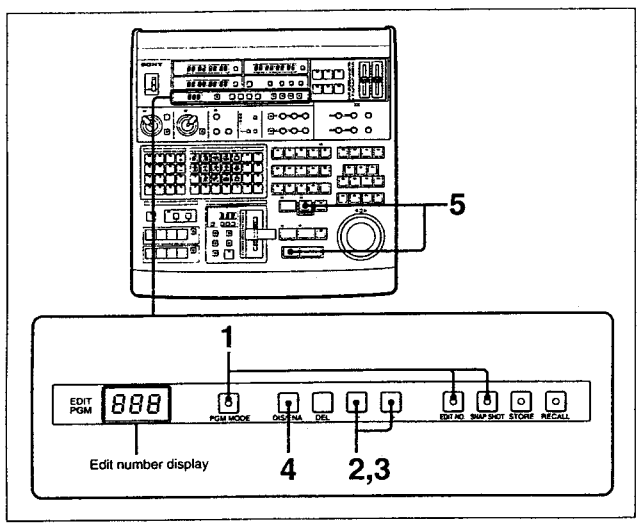
An error code appears in the corresponding time counter display.
In this case, use the setup menu to select a lower sync grade.

Automatic Execution of Multiple Edits —Auto Assembly

Automatic, sequential recording of edits registered in the EDL is called auto assembly. You can designate a given edit as the initial edit, and automatically record edits with higher edit numbers. You can also skip edits which need not be recorded.

For more information about the EDL, see Chapter 7.

To conduct an auto assemble edit, proceed as follows.



Auto assemble edit

1 If any of the PGM MODE, EDIT NO. or SNAPSHOT buttons in the EDIT PGM section are not lit, press them, turning them on.

2 Designate an initial edit by pressing the '+' and '–' buttons until its number appears in the edit number display.
- If you want to record all edits after the initial edit, proceed to step **5**.
- If you want to skip a certain edit, proceed to step **3**.

3 Using the '+' and '–' buttons, display the number of the edit which you want to skip in the edit number display.

4 Press the DIS/ENA button.
The leftmost digit in the edit number display changes to a minus sign (–).[1)]
To skip more edits, return to step **3**.

5 Press the AUTO ASM (=SHIFT + AUTO EDIT/END) button in the AUTO CONTROL section.
Recording begins automatically from the initial edit specified in step **2**.

To halt auto assembly

Press the ALL STOP button.
All VCRs stop, and the unit leaves auto assemble mode.

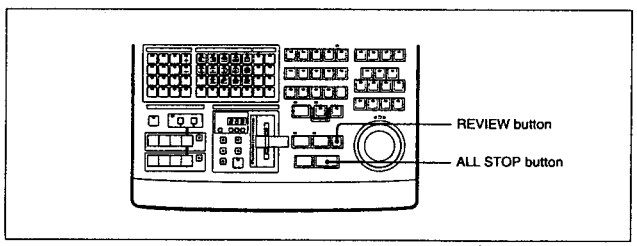
1) The edit remains in the EDL, even if a minus sign is displayed before its edit number. Pressing the DIS/ENA button once more removes the minus sign and cancels the designation.

Reviewing the Edit

After executing the edit, you can conduct a review in order to check the signals which have been recorded on the master tape.
During a review, master tape playback is displayed on the recorder monitor. If you press the SOURCE button in the MONITOR section, turning it on, and select the recorder by pressing the R-VTR button in the SOURCE section, the same signals are displayed on the main monitor.

Conducting a review

To conduct a review, press the REVIEW button in the AUTO CONTROL section, turning it on.
Settings registered in the EDL as a result of edit execution are recalled to the control panel, and the edit is played back from the preroll point to the postroll point.
When the review ends, the recorder is rewound to the OUT point, where it stops.



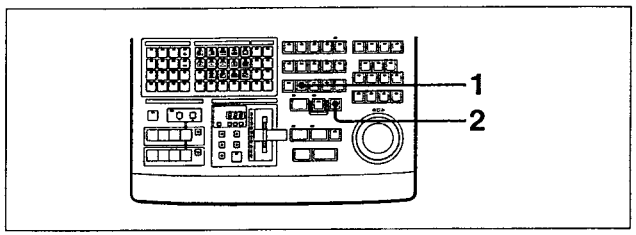
Conducting a review

To stop a review

Press the ALL STOP button.
The REVIEW button goes out, and the recorder stops.

To review near the OUT point only

Instead of reviewing the entire edit, from preroll point to postroll point, you can review only the vicinity of the OUT point.
Proceed as follows.



Reviewing near the OUT point only

1 Press the OUT button in the AUTO CONTROL section, turning it on.

2 Press the REVIEW button.
The most recently registered edit is recalled from the EDL, and the master tape is played back at normal speed near the OUT point only.

To review effect start points

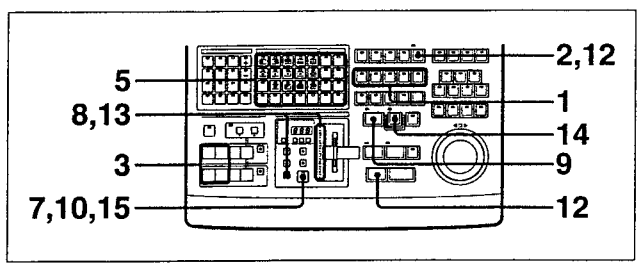
After pressing the REVIEW button to begin the review, press it once more.
The recorder begins fast forward playback, and returns to normal speed at a point slightly before the effect start point only.

1-69

On the Fly Editing With Two Players—Sync Roll Editing

In normal A/B roll editing, player 1 is started as the A-bus source, and player 2 started as the B-bus source when player 1 nears its OUT point. In another technique, called sync roll editing, both players are started simultaneously, allowing you to switch manually from bus A to bus B and back again when the desired scenes appear. This can be covenient when, for example, you are editing shots of the same event taken by two cameras from different angles.
To apply dissolves and wipes while switching between buses, use the AUTO TRANS/PAUSE button in the EFFECT TRANSITION section. To cut between the buses, use the CUT button.
Sync roll previews are automatically saved in preview memory.

The following example shows how to use the AUTO TRANS/PAUSE button.



Sync roll editing

1 Select insert or assemble mode.

2 Press the SYNC ROLL button in the EDIT TYPE section, turning it on.

3 In the VIDEO INPUT SELECT section, select source players for bus A and bus B.

4 Set the edit points (*see page 5-13*).
If you selected assemble mode in step **1**, you do not need to set the recorder OUT point.

5 Select the transition effect using the buttons in the WIPE PATTERN and MIX/EFFECT sections.

6 Set the effect transition time (*see page 5-58*).

7 If the AUTO TRANS/PAUSE button in the EFFECT TRANSITION section is not lit, press it, turning it on.

8 • To preview the edit while viewing the monitor, press the PREVIEW button and proceed to step **9**.
• To execute the edit without a preview, proceed to step **11**.

9 After passing the edit IN point [1] press the AUTO TRANS/PAUSE button at any scene to begin the effect transition.
You can switch between buses any number of times during the preview.

10 • If you are satisfied with the results of the preview, proceed to step **11**.
• If you are not satisfied, change settings (if necessary) and go back to step **7**.

11 Press the AUTO EDIT/END button to execute the edit.

12 After passing the edit IN point[1], press the AUTO TRANS/PAUSE button to switch buses.
You can switch buses any number of times before reaching the recorder OUT point.
At the recorder OUT point, the edit ends automatically. The edit data for the switches performed is registered in the EDL.

To end a sync roll edit when the recorder OUT point is not set
Press the AUTO EDIT/END or ALL STOP button.
All VCRs stop, and the unit leaves sync roll mode. Depending on the button pressed, time code for the point where the button was pressed may or may not be registered as an OUT point in the EDL.
• If the AUTO EDIT/END button is pressed, an OUT point is registered in the EDL.
• If the ALL STOP button is pressed, an OUT point is not registered in the EDL.

1) Edit IN point: In split editing, either the video IN point or the audio IN point, whichever comes later.

Editing With Manual Special Effects

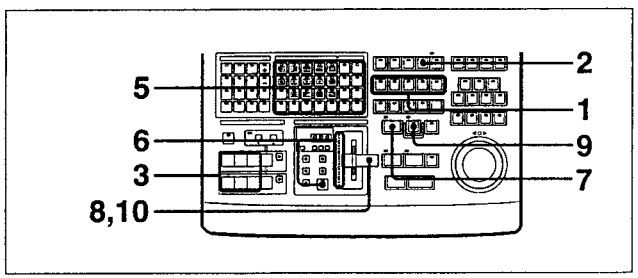
By using the fader lever to carry out dissolves and wipes manually, you can vary the transition speed, stop midway through the transition, and achieve other special effects. You can also switch back to A-bus video after a transition to B-bus video. Effects created in this way are not registered in the EDL, even if you execute an edit.

Note

Instead of using the fader lever, you can also use the AUTO TRANS/PAUSE button or the CUT button, which switches instantly between A-bus and B-bus signals.

For details on using the AUTO TRANS/PAUSE button, see "Auto Transition Effects" (page 6-6).

The following example shows how to use the fader lever to create special effects.



Using the fader lever for special effects

1 Select insert or assemble mode.

2 Press the MAN button in the EDIT TYPE section, turning it on.

3 In the VIDEO INPUT SELECT section, select source players for bus A and bus B.

4 Set the edit points (*see page 5-13*).
If you selected assemble mode in step **1**, you do not need to set the recorder OUT point.

5 Select the transition effect using the buttons in the WIPE PATTERN and MIX/EFFECT sections.

6 Check the FROM and TO sources.
Only one transition indicator should be lit—the topmost indicator on the A side if the transition moves from bus A to bus B, or the lowermost indicator on the B side if it moves in the opposite direction.

7 • To rehearse the transition while viewing playback on the monitor, press the PREVIEW button and proceed to step **8**.
• If a preview is not necessary, proceed to step **9**.

8 A preview starts as soon as you press the PREVIEW button. When it reaches the edit IN point manipulate the fader lever and observe the changes in the picture.
You can switch between the sources any number of times before reaching the recorder OUT point.
• If satisfied with the results of the preview, check the FROM and TO sources and proceed to step **9**.
• To redo the preview, make the necessary adjustments and return to step **6**.

9 Press the AUTO EDIT/END button to execute the edit.

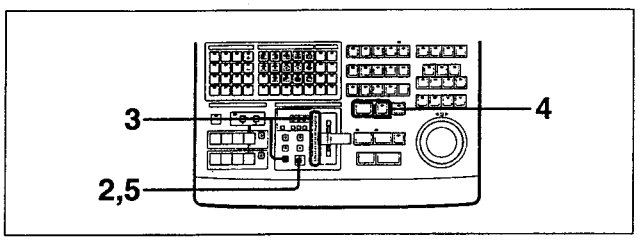
10 Use the fader lever to switch between buses at the desired scenes. You can switch any number of times before reaching the recorder OUT point.

To end a manual effects edit when the recorder OUT point is not set

Press the AUTO EDIT/END or ALL STOP button.
All VCRs stop, and the unit leaves manual effects mode.
• If the AUTO EDIT/END button is pressed, the edit data (except for the effect type and transition time) is registered in the EDL.
• If the ALL STOP button is pressed, nothing is registered in the EDL.

Auto Transition Effects

Instead of using the fader lever, you can also use the AUTO TRANS/PAUSE button for manual transition effects. After carrying out steps **1** to **5** in the procedure on page 6-4, proceed as follows.



Creating effects in auto transition mode

1 Set the effect transition time (*see page 5-58*).

2 If the AUTO TRANS/PAUSE button is not lit, press it, turning it on.

3 Check the FROM and TO sources.
Only one transition indicator should be lit, on the A or B side.

4 Press the PREVIEW or AUTO EDIT/END button to put the unit into preview or edit execution mode.

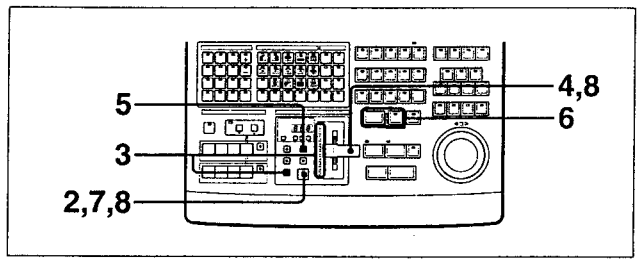
5 After passing the edit IN point, press the lit AUTO TRANS/PAUSE button.
The auto transition begins, switching from one bus to the other. You can switch between buses any number of times before reaching the recorder OUT point.

To suspend an auto transition

After starting the transition by pressing the AUTO TRANS/PAUSE button, press it again at the desired position. The button changes from lit to flashing.
To resume the transition, press the AUTO TRANS/PAUSE button once more. The button changes from flashing to lit.

To stop an auto transition automatically at the desired position

By manipulating the fader lever, you can decide the position where you want to halt an auto transition. After carrying out steps **1** to **5** on page 6-4, proceed as follows.



Stopping an auto transition automatically at the desired position

1 Set the effect transition time (*see page 5-58*).

2 If the AUTO TRANS/PAUSE button is not lit, press it, turning it on.

3 Check the FROM and TO sources.
Only one transition indicator should be lit, on the A or B side.

4 Move the fader lever to the position at which you wish to stop.

5 Press the LEVER PAUSE button, turning it on.

6 Press the PREVIEW or AUTO EDIT/END button to put the unit into preview or edit execution mode.

7 After passing the edit IN point, press the lit AUTO TRANS/PAUSE button.
The auto transition begins, and stops automatically at the fader lever position.
The AUTO TRANS/PAUSE button starts flashing.

8 To resume the transition, press the AUTO TRANS/PAUSE button again or move the fader lever.
If you move the fader lever, the unit leaves auto transition mode.

Setting Independent Video and Audio IN Points—Split Editing

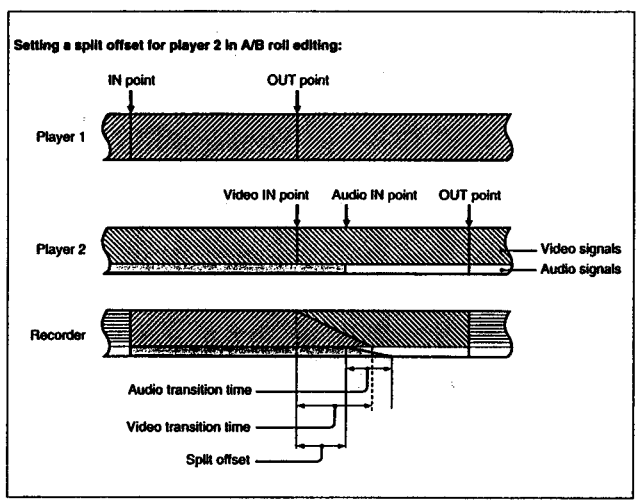
Editing with independent video and audio IN points is called split editing. You can set split offsets separately for all the connected VCRs (player 1, player 2, and recorder).

The following restrictions apply in split editing.

- You must select insert mode as the edit mode to perform split editing. Moreover, it is not possible to set different split offsets for audio channels 1 and 2. The split offset is always the same for channel 1 and channel 2.
- The maximum split offset between the video IN point and the audio IN point is:
  59 seconds and 29 frames (FXE-100) or
  59 seconds and 24 frames (FXE-100P).
- Independent OUT points cannot be set for audio and video.
- If you set split offsets for the players and the recorder, the recorder split offset takes priority.

Relationship between transition times and split offset

In split editing, you can set separate transition times for audio and video.
In this case, the relationship between the transition times and the split offset is as shown below.

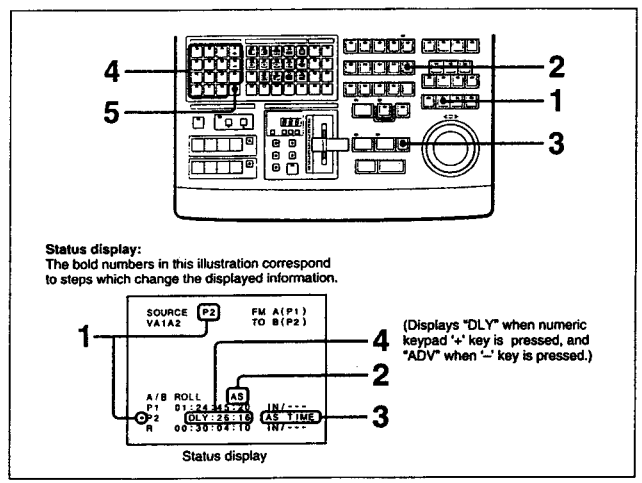


Relationship between transition times and split offset

Setting the split offset

The audio IN point is calculated automatically, using the video IN point and the split offset.
For example, the procedure below shows how to set a split offset for player 2 when the following settings have been made.

- **Insert edit channels:** Video, audio 1, audio 2
- **Edit type:** A/B roll



Splitting the video and audio IN points for player 2

1 In the SOURCE section, select the VCR for which you want to split the audio and video IN points (in this example, player 2).

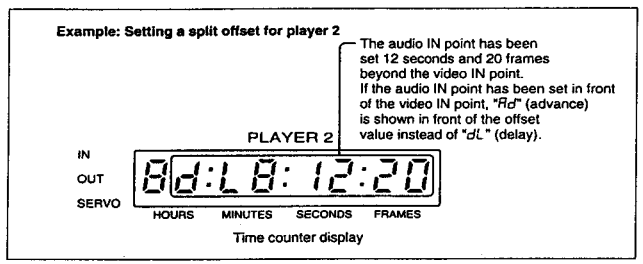
2 Press the AUDIO SPLIT button in the EDIT MODE section.
The button begins to flash and the unit enters split edit mode.

3 Press the SET DUR button in the TIME MARK section.
The button begins to flash and the numeric keypad is enabled.

4 Enter the split offset (seconds:frames) using the numeric keypad.
Press the '+' key to set the audio IN point beyond the video IN point, and the '–' key to set it in front of the video IN point. You can enter up to 4 digits.
If the most significant digits are '0', they do not need to be entered again.

(Continued)

5 Press the ENT key in the numeric keypad.
The value entered in step **4** is confirmed as the split offset, and the unit leaves numeric keypad mode.
The split offset is shown in the appropriate time counter display, as follows.



To display the split offset
You can display the split offset at any time by selecting the VCR in the SOURCE section, and then pressing the SPLIT (=SHIFT + AUDIO SPLIT) button in the EDIT MODE section. The split offset is displayed in the main monitor's status display, and in the time counter display of the selected VCR.

To change the split offset
To change the split offset, put the unit into split mode, press the SET DUR button in the TIME MARK section and enter the new offset with the keys in the numeric keypad. In this case, the '+' and '– ' keys are used to specify "DLY" and "ADV", respectively. They do not increment or decrement the numeric value.

To cancel a split offset
Display the split offset, then press the CLEAR button in the AUTO CONTROL section.

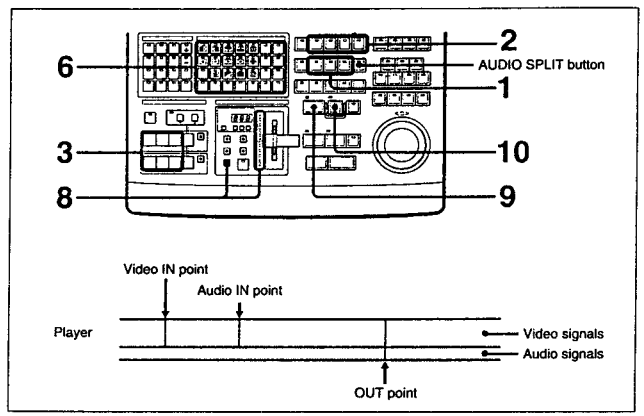
To set the video IN point while the AUDIO SPLIT button is flashing
You can set video edit points in the normal way, by pressing the MARK IN and MARK OUT buttons (but not the SET DUR button) in the TIME MARK section.

To exit split edit mode
Press the flashing AUDIO SPLIT button, turning it off.

1-74

Executing a split edit

The following example shows how to execute a split edit using player signals on either the A bus or B bus.



Executing a split edit

1 Select insert mode in the EDIT MODE section by pressing insert buttons (V, A1, A2) for the desired channels, turning them on. If a button is flashing, press it twice.

2 Select the edit type in the EDIT TYPE section.

3 In the VIDEO INPUT SELECT section, select the source.

4 Set the edit points (*see page 5-13*).

5 Set the split offset between the audio IN point and the video IN point for the selected player, on either the A bus or the B bus.
For details, see "Setting the split offset" (page 6-9).

6 Select the transition effect using the buttons in the WIPE PATTERN and MIX/EFFECT sections.

7 Set the effect transition time (*see page 5-58*).

8 Check the FROM and TO sources.

9 Preview the edit and change the settings as necessary.
When you press the PREVIEW button, the AUDIO SPLIT button stops flashing and lights.

(Continued)

10 Execute the edit.
The AUDIO SPLIT button stops flashing and lights when you press the AUTO EDIT/END button, and goes out when the edit ends.

Note

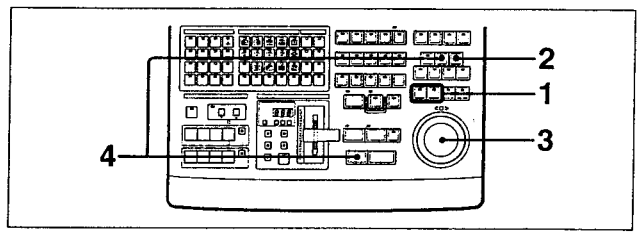
When a split edit is executed, the split offset is saved in EDL memory as part of the information relating to that edit. However, it is not carried over to new edits.

Editing Variable-Speed Playback—DMC Editing

If your player VCR supports Dynamic Tracking (DT) playback, you can edit noiseless, variable-speed video playback. This kind of editing is called Dynamic Motion Control (DMC). In DMC editing, it is necessary to set the initial playback speed, or speed of the player at the point where it crosses the IN point.

Setting the initial speed for DT playback

Proceed as follows to set the initial speed for DT playback.



Setting the initial speed for DT playback

1 Select the DT player using the buttons in the SOURCE section.

2 Press the DMC button in the MANUAL CONTROL section, turning it on.
The specified player enters DMC mode.

3 Press the search dial to put it into the shuttle mode (high) position, and rotate to control the playback speed. Stop rotating the dial when playback reaches the desired speed.

Note

This unit can control DT playback at speeds ranging from –1 to +3 times normal speed. However, the actual speeds produced may vary, depending on the particular VCR.

4 Press the MK-SPD (=SHIFT + SPEED) button in the MANUAL CONTROL section.
The speed of DT playback at the time when you pressed the button is stored in the unit's memory.

To cancel DMC mode

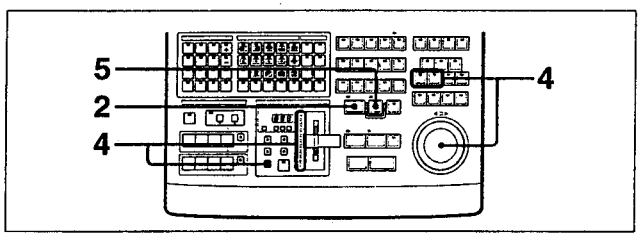
Press the lit DMC button, turning it off.

To delete an initial speed from memory

Once you have set a VCR's initial playback speed and used it in editing, that player always begins DT playback at the selected speed. If you want to begin at normal speed, it will be necessary to delete the initial speed from memory.
To delete the initial speed, select the player with the appropriate button in the SOURCE section, press the SPEED button in the MANUAL CONTROL section, and then press the CLEAR button in the AUTO CONTROL section.

Performing a DMC edit

To perform a DMC edit, first initialize the DT playback speed, then proceed as follows.
After a preview or edit passes the IN point, you can control the DT playback speed manually.



DMC editing

1 Follow the standard procedures to select the edit mode and so on.

2 Check the FROM and TO sources.

3 • If you want to execute the edit without a preview, proceed to step **5**.
• If you want to preview the edit first, press the PREVIEW button.
The button lights and a preview begins. When a player programmed for DT playback reaches the IN point, the DMC button begins flashing, and DT playback begins at the specified initial speed.
If you also want to control the playback speed during the preview, proceed to step **4**.
If you do not want to control the playback speed, wait for the preview to finish and then proceed to step **5**.

4 To control the playback speed manually, press to put the search dial into shuttle mode and rotate it.

Notes

- The search dial does not affect playback speed until it reaches the DT initial speed position.
- Instead of using the search dial, you can also press the PLAY button in the MANUAL CONTROL section for playback at +1 times normal speed, or press the STILL button for still playback.

5 Press the AUTO EDIT/END button to execute the edit.
Just as during a preview, you can use the search dial and PLAY button to control playback speed beyond the IN point, and press the STILL button for still playback.
Note that manually controlled playback speeds are not saved in the EDL, although the DT initial speed is saved.

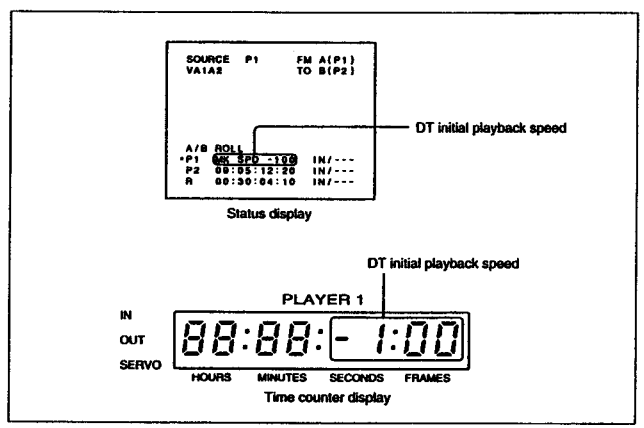
6 Press the AUTO EDIT/END button to execute the edit.
Just as during a preview, you can use the search dial and PLAY button to control playback speed beyond the IN point, and press the STILL button for still playback.
Note that manually controlled playback speeds are not saved in the EDL, although the DT initial speed is saved.

To change the initial speed during a preview

After selecting the desired speed in step **5**, press the SPEED button to display the current DT playback speed and then press the MK-SPD (=SHIFT + SPEED) button.

To check the initial DT playback speed

Select the player with the appropriate button in the SOURCE section, then press the SPEED button in the MANUAL CONTROL section, turning it on. The initial DT playback speed is displayed in the main monitor's status display and in the appropriate time counter display as a percentage of normal speed. For example, if the initial speed for player 1 on bus A has been set to –1 times normal speed, the following information is displayed.



Checking DT initial playback speed

Automatic calculation of edit points when a DT initial speed is set

Even if you have set an initial DT playback speed, the unit calculates edit points and durations in the same way as in normal editing, regardless of the initial speed.

For details about automatic calculation of edit points and durations, see "Relation Between IN/OUT Points and Duration" (page 5-17).

1-76

Editing With Fade In and Fade Out

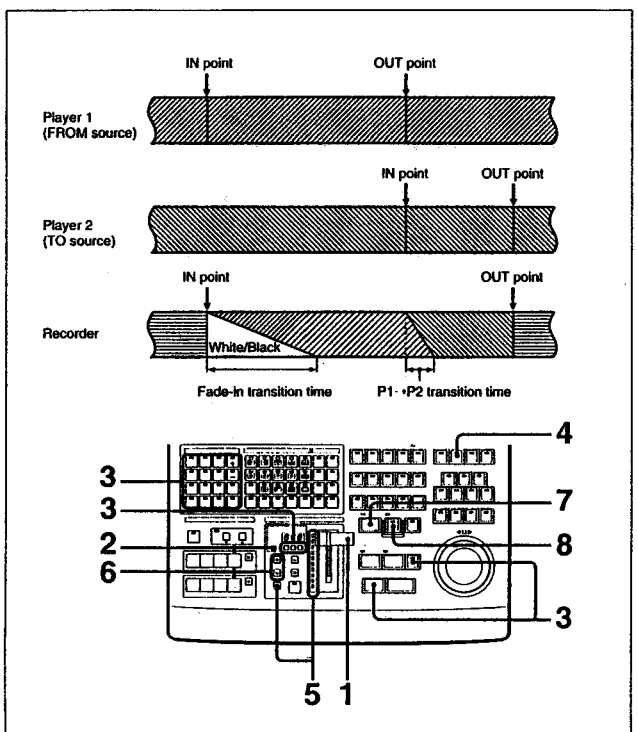
You can fade player video in to or out from a black or white background. The black or white background is output from the TO source bus.

Notes

- The fade-in and fade-out effects cannot be used when any of the key selection buttons (LUMINA KEY, CHROMA KEY, P IN P) are lit.
- The fader lever cannot be used for fade-in or fade-out effects.
- Fade-in from the edit IN point cannot be used during sync roll editing.
- If you perform a fade-in during A-roll editing, the black or white background is output on bus B, overriding the A-roll effect.

Fade In

Proceed as follows to use the fade-in effect in normal A/B roll editing. This example assumes that player 1 has been selected as the A-bus source, and player 2 as the B-bus source.



Fade-in A/B roll editing

1 Push the fader lever all the way up to the A side, so that only the topmost transition indicator is lit.

2 Press the VIDEO/AUDIO/FADE button in the EFFECT TRANSITION section, lighting the FADE indicator above the button.
The fade transition time may now be set.

3 Set the fade transition time using the TRANS RATE buttons in the EFFECT TRANSITION section, or the SET TRANS (=SHIFT + SET DUR) in the TIME MARK section button *(see page 5-58)*.

Note

The fade transition time must be shorter than the duration for player 1. If it is not shorter, an error code is displayed in the appropriate time counter display when you press the PREVIEW or AUTO EDIT/END button, and the preview or edit is not executed. The edit is executed if the fade transition time and player 1 duration are equal.

4 Press the PGM button in the MONITOR section.
The main monitor displays still playback from player 1.

5 Check the FROM and TO sources.

6 To fade the playback from player 1 in from a white background, press the WHITE FADE button in the EFFECT TRANSITION section. Press the BLACK FADE button to fade in from a black background.
The BKGD button in the TO source row of the VIDEO INPUT SELECT section (in this example the B-BUS row) lights automatically, and the picture changes gradually to a white or black background, using the same transition time which was set in step **3**. The lit WHITE FADE or BLACK FADE button begins to flash.

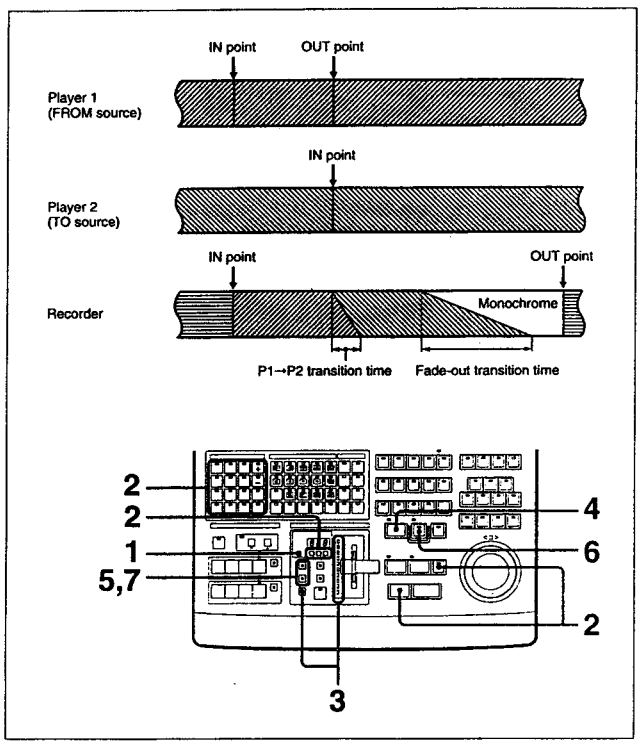
7 Preview the edit and change the settings as necessary.
The WHITE FADE or BLACK FADE button flashes during the preview and goes out at the end of the transition (when player 1 video has completely replaced the background).

8 Execute the edit.
During the edit, the flashing WHITE FADE or BLACK FADE button goes out at the end of the fade-in transition.

1-77

Fade Out

You can perform a fade out in A/B roll editing at any point after the transition from the FROM source to the TO source. The following example shows how to fade the TO source playback out to a black or white background after an A/B roll transition. Make the normal edit point settings for an A/B roll edit (but do not set the OUT point for the TO source), then proceed as follows. This example assumes that player 1 has been selected as the A-bus source, and player 2 as the B-bus source.



Fade-out in A/B roll editing

1 Press the VIDEO/AUDIO/FADE button in the EFFECT TRANSITION section, lighting the FADE indicator above the button.
The fade transition time may now be set.

2 Set the fade transition time using the TRANS RATE buttons in the EFFECT TRANSITION section, or the SET TRANS (=SHIFT + SET DUR) button in the TIME MARK section *(see page 5-58)*.

3 Check the FROM and TO sources.

4
- If you want to preview the edit, press the PREVIEW button and proceed to step **5**.
- To execute the edit without a preview, proceed to step **6**.

5 When the preview starts, wait until the end of the transition to the TO source, then press the WHITE FADE or BLACK FADE button in the EFFECT TRANSITION section.
At the end of the fade-out transition (when player 2 video has been completely replaced by the background), the lit WHITE FADE or BLACK FADE button starts flashing.
- If satisfied with the preview, proceed to step **6**.
- If not satisfied, make the necessary changes and redo the preview.

6 Press the AUTO EDIT/END button to execute the edit.

7 After the A/B roll transition, when player 2 video has completely replaced player 1 video, press the WHITE FADE or BLACK FADE button at the desired scene, turning it on.
- After the fade-out transition (when the white or black background has completely replaced player 2 playback), the lit WHITE FADE or BLACK FADE button starts flashing.
- When the recorder finishes recording, the unit leaves fade mode and the flashing WHITE FADE or BLACK FADE button goes out. The monitor displays still playback from player 2.

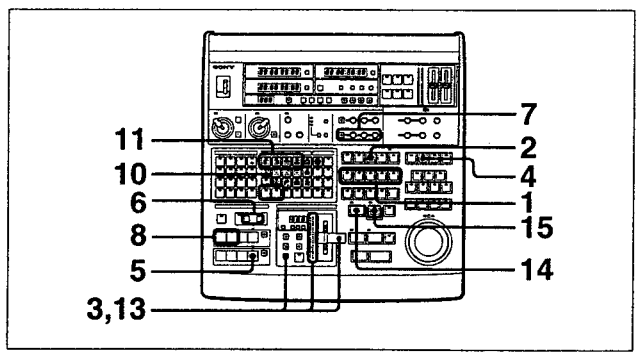
1-78

Using Color Backgrounds

The unit's internal color background generator can be used to generate effective backgrounds for use with mixes, wipes and so on.
This section shows how to slide player video into a color background, and how to switch to a color background by sliding player video out.

Slide In and Slide Out Using a Color Background

The following example shows how to slide in or slide out video from a source player using a selected background color.



Slide in and slide out using a color background

1 Select the edit mode in the EDIT MODE section.

2 Press the A/B ROLL button in the EDIT TYPE section, turning it on.

3 Select the B bus by pressing the CUT button in the EFFECT TRANSITION section, or by pulling the fader lever all the way down to the B side. Check to be sure that only the lowermost transition indicator on the B side is lit.

4 Press the PGM button in the MONITOR section, turning it on.

5 In the VIDEO INPUT SELECT section, press the BKGD button in the B-BUS row, turning it on, to select the built-in color background generator as the source for bus B.
The COLOR BACKGROUND indicator lights, and a background color is output to the monitor.

6 Use the background color selection buttons (▼ and ▲) to select one of the 25 background colors.

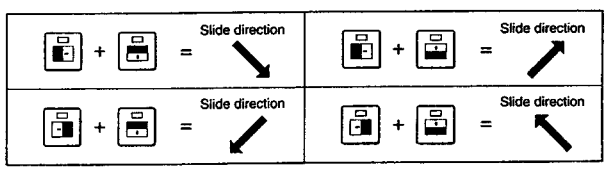
7 Adjust the hue, luminance and chrominance of the background color by pressing the B-BUS button in the VIDEO LEVEL & HUE section and then rotating the three knobs.

8 Press the P1 or P2 button in the A-BUS row of the VIDEO INPUT SELECT section, turning it on, to select player 1 or player 2 as the source for bus A.

9 Set the edit points (*see page 5-13*).
For bus B, enter a duration by pressing the AUX button in the SOURCE section, turning it on, and then pressing the SET DUR button and using the numeric keypad.

10 Press the SLIDE IN button in the WIPE PATTERN section to select a slide in effect. Press the SLIDE OUT button to select slide out.

11 Use the horizontal and vertical wipe buttons to set the direction.
To slide in at a slant, press one each of the horizontal and vertical wipe buttons, turning them on.



12 Set the slide-in or slide-out transition time (*see page 5-58*).

13 Check the FROM and TO sources.
- For a slide in, only the lowermost transition indicator on side B should be lit.
- For a slide out, only the topmost transition indicatoron side A should be lit.

If other indicators are lit, press the CUT button in the EFFECT TRANSITION section to switch buses.

14 Preview the edit and change the settings as necessary.

15 Execute the edit.

1-79

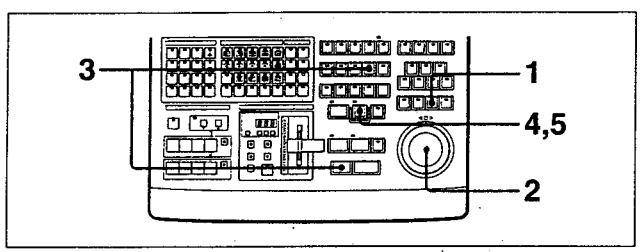
Recording Time Code—Time Code Insert

To perform time code editing [1] with a tape containing recorded video or audio but no recorded time code, it is necessary to record consecutive time code on the tape in advance, at least for the segment you wish to edit. Adding time code to a pre-recorded tape in this way is called time code insert.
Even if time code is already recorded on the tape, you may want to change the time code values. This is also done by executing a time code insert with the desired preset value. If you do not set a preset value, time code will be inserted so as to form a continuous sequence with the time code already recorded on the tape.

Notes

- Time code cannot be recorded correctly on a tape or a section of tape on which nothing at all has been recorded.
- When inserting time code into an already recorded tape, the tape should normally be loaded into the recorder VCR. This prevents misoperations such as selecting a player VCR containing a tape with time code that should not be overwritten.

To perform a time code insert, proceed as follows.



Time code insert

1 Insert the tape onto which you want to record time codes into a VCR (normally the recorder), and select that VCR in the SOURCE section.

2 Using the search dial, search for the desired scene (the time code insert IN point).
If time codes are recorded before the IN point, and you want to insert time codes so as to form a continuous sequence, rewind the tape to the section containing the already recorded time codes.

Note

Before recording time code, check to be sure that signals have already been recorded on the tape, at least between the preroll point and the IN point.

1) Time code editing: Editing which uses time code to determine edit point locations, as opposed to editing which uses CTL codes.

3 Press the TC (=SHIFT + A2) button in the EDIT MODE section.

4 Press the AUTO EDIT/END button in the AUTO CONTROL section.
The button begins to flash, and the tape is rewound from the IN point to the preroll point. It stops there, and begins to run in the forward direction. Time code recording begins when the tape nears the IN point. When the IN point is passed, the AUTO EDIT/END button stops flashing and lights.
During time code recording, the monitor displays the recorded video.

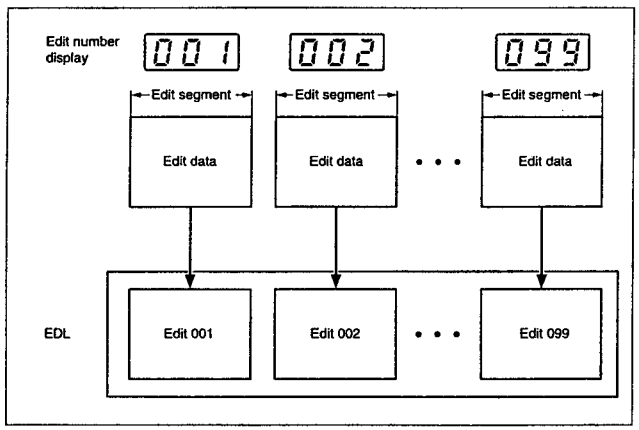
5 Press the AUTO EDIT/END button at the point where you wish to end the time code recording.

To preset the time code for an IN point

Preset the time code for an IN point just as you would set an edit point, by pressing the MARK IN button in the TIME MARK section, or by pressing the SET IN (=SHIFT + MARK IN) button and entering the time code value with the numeric keypad.

About the EDL

The edit decision list (EDL) is stored in the unit's internal memory. As shown below, it contains a list of edits numbered from 001 to 099. Each edit contains all of the settings needed to carry out an automatic edit.
After registering an edit in the EDL, you can recall it whenever you need it again. You can revise a recalled edit and save the revised version. The current edit is displayed as a three-digit number in the edit number display, located in the EDIT PGM section of the control panel.



Structure of the EDL

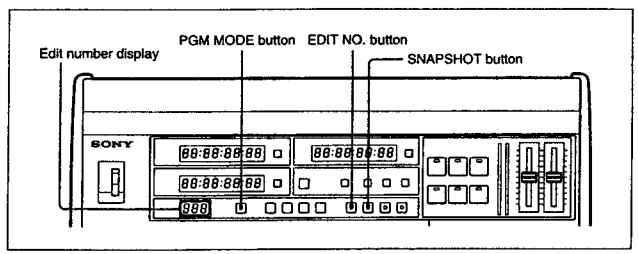
When performing an EDL operation

The PGM MODE button and the EDIT NO. button in the EDIT PGM section should both be lit. If they are not lit, press them so that they light. While the PGM MODE button is lit, the edit number is shown in the edit number display.

For details about the display format, see "Edit number display format" below.

If you want to include snapshots in the operation, press the SNAPSHOT button so that it lights also.

See page 7-4 for more information about snapshots.



PGM MODE button, EDIT NO. button, SNAPSHOT button

Edit number display format

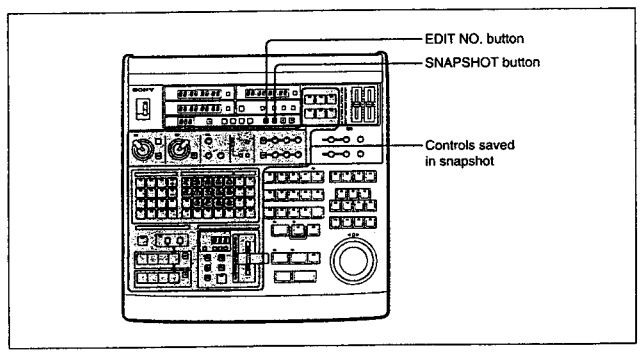
While the PGM MODE button is lit, the edit number is displayed in the following format.

EDIT PGM 003	Registered edits are displayed as three-digit numbers.
EDIT PGM n04	New edits, and edits deleted from the EDL, are displayed as two-digit numbers preceded by "n" (new). *See page 7-6 for more information about new edits, and page 7-9 for more information about deleted edits.*
EDIT PGM -02	Skipped edits are displayed as two-digit numbers preceded by a minus sign (–). *See page 7-5 for more information about skipped edits.*

1-81

About Snapshots

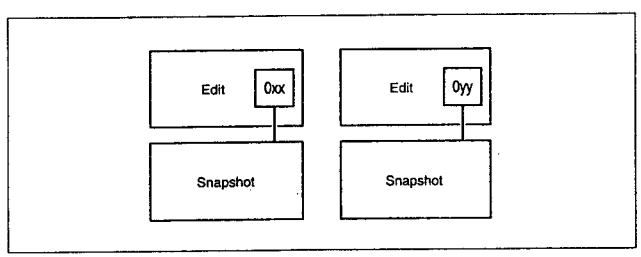
When the unit saves an edit, it can also save the settings of the controls in the AUDIO INPUT SELECT section and the video switcher/special effects section. This data is called a snapshot. Whenever you recall a snapshot from memory, controls in these sections are instantly restored to their settings at the time when the snapshot was taken.



Controls saved in a snapshot

Snapshot numbers

Snapshots are managed using the same numbers as edits. In other words, the same number is shared by one edit and one snapshot.



Relation between edits and snapshots

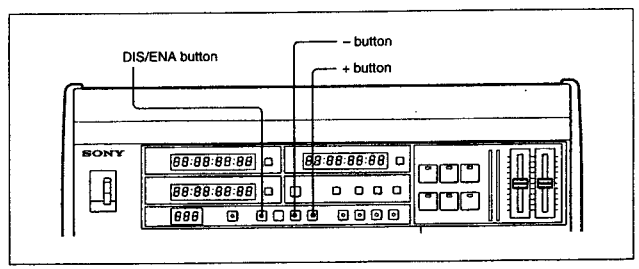
To perform an operation using snapshots only

If the EDIT NO. and SNAPSHOT buttons in the EDIT PGM section are both lit when you perform an EDL operation, the operation affects edits as well as snapshots. If you want to perform an operation using snapshots only, press the EDIT NO. button, turning it off. You can register a snapshot, recall it, or perform any other EDL operation just as you would for an edit.

Using the EDL

The following section describes how to register edits in the EDL, how to recall them, how to revise them, and so forth.

Selecting an edit for an EDL operation



Selecting an edit for an EDL operation

Except when registering a new edit, you will always need to select the edit to work with in an EDL operation.
To select an edit, press the '+' and '–' buttons in the EDIT PGM section until the number of the edit you wish to use appears in the edit number display.

- **+ button:** The displayed number is incremented by 1 each time you press the button. If the number is 099, it changes to 001. Pressing this button together with the SHIFT button increments the displayed number by 10.
- **– button:** The displayed number is decremented by 1 each time you press the button. If the number is 001, it changes to 099. Pressing this button together with the SHIFT button decrements the displayed number by 10.

Note

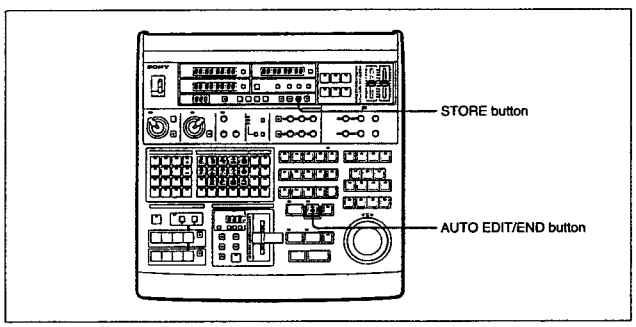
The EDIT NO. button lights if an edit has been registered for the displayed number, and goes out if not.
The SNAPSHOT button lights if a snapshot has been registered, and goes out if not.

To skip edits during an EDL operation

When you perform an auto assembly operation involving multiple edits, or when you transfer data to and from the EDL, you can exclude specific edits from the operation.
To skip a specific edit, select that edit and press the DIS/ENA button.
The leftmost digit in the edit number display changes from '0' to a minus sign (–).
To undo the skip designation, press the DIS/ENA button once more. Note that the edit remains in EDL memory even if a minus sign is shown before its edit number.

Registering an Edit in the EDL

- After selecting the edit, press the AUTO EDIT/END button in the AUTO CONTROL section to execute an automatic edit. The edit is registered in the EDL.
- To register the edit without executing an automatic edit, set the edit points and so on, and then press the STORE button in the EDIT PGM section. The button lights, and the edit is registered.



Registering an edit

About new edits

When you register an edit in the EDL, the number shown in the edit number display is incremented and the unit is readied for a new edit. When displaying a new edit number, "∩" is shown in the leftmost column of the edit number display.

When the EDL becomes full

When n99 is displayed in the edit number display, it means that you have already registered 98 edits and that the EDL is almost full. After you register edit n99, the number in the display changes as follows, depending upon the the setting of item 309 OVERFLOWED EDIT in the setup menu.

If item 309 is set to INHIBITED: The number changes from n99 to 099. In this state, the AUTO EDIT/END and STORE buttons are disabled, and no new edits can be registered. If you press one of these buttons, an error code is displayed in the time counter display.
Setup menu item 309 is factory preset to INHIBITED.

If item 309 is set to OVERWRITE: The number changes to 001. In this state, when you press the AUTO EDIT/END or STORE button, the edit previously registered under number 001 is overwritten and the display changes to 002.

For details, see Chapter 8.

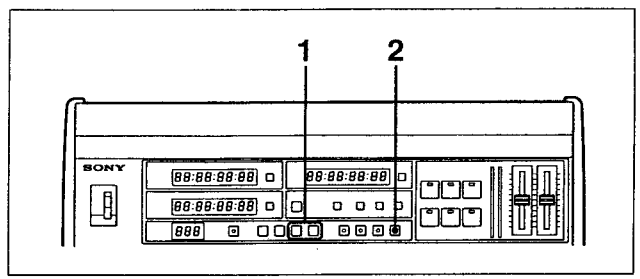
How long are edits held in internal memory?

Edits remain in internal memory for about one week after you turn the unit off. If you want to save edits permanently, transfer them to a personal computer or other external equipment.

For details, see "Transferring Edits To and From External Equipment" (page 7-11).

Recalling Edits from the EDL

You can recall edits from the EDL in order to return the control panel to the state it was in at the time the edit was saved. Proceed as follows.



Recalling an edit

1 Press the '+' and '–' buttons to select the edit.

2 Press the RECALL button.
The RECALL button lights. The various other buttons on the control panel light or go out, according to the settings contained in the selected edit.

Revising and Deleting Edits

To revise an edit

To revise an edit, first recall it from the EDL, then use the normal procedures to adjust the settings.

For more information about how to adjust the settings, see the following sections:
- *Edit modes: Selecting an Edit Mode (page 5-3).*
- *Sources: Selecting Video and Audio Signals (page 4-7).*
- *Edit points: Changing edit points (page 5-21).*
- *Special effects: Selecting Special Effects (page 5-25).*
- *Transition times: Setting the Transition Time (page 5-58).*

To save an edit after recalling and revising it

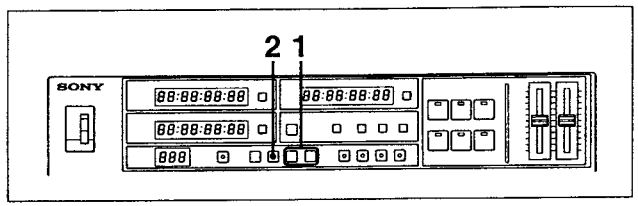
Press the AUTO EDIT/END button to execute an automatic edit, or press the STORE button.

To undo changes after previewing a recalled edit

Press the LAST ED (= SHIFT + GO TO) button in the AUTO CONTROL section.

To delete an edit

When you have no more use for an edit, proceed as follows to delete it from the EDL.



Deleting an edit

1 Press the '+' and '–' buttons to select the edit.

2 Press the DEL button.
The edit is deleted from the EDL and "∩" appears in the leftmost column of the edit number display.

Note

Deletions are permanent. Deleted edits cannot be restored.

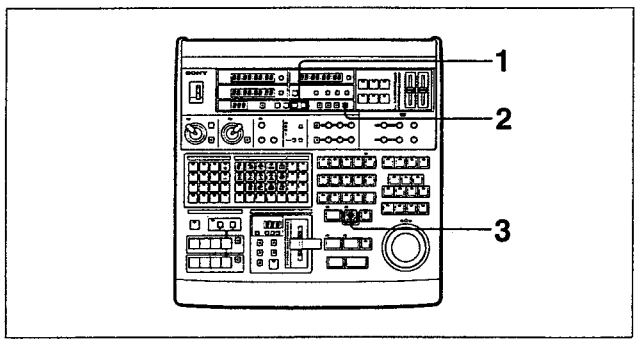
To delete all of the edits registered in the EDL

Under setup menu item 309 OVERFLOWED EDIT, select ALL CLEAN UP.

For details, see Chapter 8.

Using Registered Edits in Automatic Editing

Proceed as follows to use an edit from the EDL in automatic editing.



Using a registered edit in automatic editing

1 Press the '+' and '–' buttons to select the edit.

2 Press the RECALL button to recall the specified edit to the control panel.

3 Press the AUTO EDIT/END button in the AUTO CONTROL section.
An automatic edit begins, using the edit shown in the edit number display.

Before pressing the AUTO EDIT/END button, you can also preview the edit and make any revisions that may be necessary.

For details, see "Revising and Deleting Edits" (page 7-8).

To execute automatic edits continuously

You can also perform continuous automatic editing (auto assembly) using edits registered in the EDL.

For details, see page 5-66.

Transferring Edits To and From External Equipment

You can connect external equipment such as a personal computer to this unit's EDL IN/OUT connector in order to transfer data to and from the EDL. Snapshots are included in the transfer if both the EDIT NO. and SNAPSHOT buttons in the EDIT PGM section are lit. Extinguish the SNAPSHOT button if you want to transfer edits only, and extinguish the EDIT NO. button if you want to transfer snapshots only.

About the EDL format

This unit uses the Sony format for EDL data.

Data transmission protocol

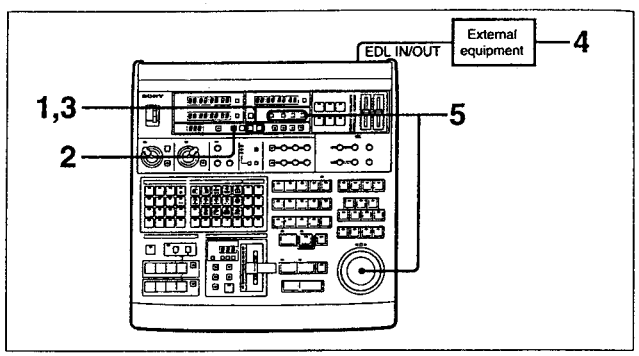
The data transmission protocol is factory preset as follows:

Stop bits: 1
Data bits: 8
Parity: None
Transmission speed: 9600 bps

1-85

To transfer EDL data to external equipment

Designate an arbitrary edit as the initial edit. The initial edit and all subsequent edits will be transferred to the external equipment, except for those edits which you specifically exclude from the transfer.



Transferring EDL data to external equipment

1 If you want to exclude an edit from the transfer, select the edit using the '+' and '–' buttons in the EDIT PGM section. Otherwise proceed to step **3**.

2 Press the DIS/ENA button.
The '0' in the leftmost column of the edit number display changes to '–'. If there are any more edits that you want to skip, return to step **1**.

3 Use the '+' and '–' buttons to designate the initial edit.

4 Make preparations on the external equipment side to receive the data.

5 Under setup menu item 310 EDL SWITCH, select DUMP and press the SET button. Next rotate the search dial to select GO, and press the SET button once more to begin the transmission.

For details, see Chapter 8.

To import EDL data from external equipment

Proceed as follows to import data into the EDL from external equipment.

1 Make preparations on the external equipment side to send the data.

2 Under setup menu item 310 EDL SWITCH, select LOAD and press the SET button. Next rotate the search dial to select GO, and press the SET button once more to begin the transmission.

For details, see Chapter 8.

Setup Menu Item Table

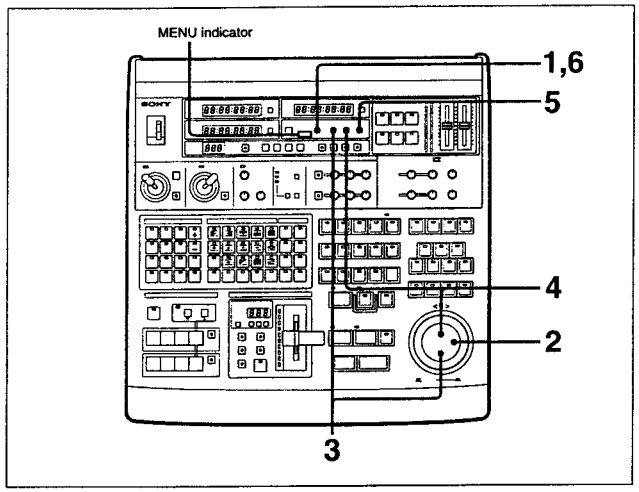
Settings for the following items can be changed with the setup menu.

Item group	Number	Name	Settings
System Configuration	101	VIDEO INPUT SELECT	Composite or S-video input
	102	PREROLL TIME	Preroll time
	103	BEEP	Warning sound on/off
	104	EDIT REFERENCE	Time code type (LTC or CTL)
	105	USER BITS	User bits
	106	CTL COUNTER AUTO RESET	CTL counter auto reset mode
	107	A-ROLL MODE SELECT	Freeze error recovery
	108	A-ROLL TIMING OFFSET	Auto freeze timing
	109	TC JUMP	Require continuous time codes
	110[a]	FRAME CONTROL MODE	Drop-frame mode
	111	FF/REW MODE SELECT	High-speed tape transport mode selected with FF and REW buttons
Switcher	201	WIPE PATTERN	User button wipe patterns
	202	DIGITAL CNR LEVEL	Color noise removal level
	203	DIGITAL YNR LEVEL	Y (luminance) signal noise removal level
	204	DIGITAL VERTICAL ENHANCER	Vertical enhancer trigger level
	205	COLOR CORRECTION ADJUSTMENT WIDTH	Color correction joystick range
	206 (FXE-100)	VIDEO LEVEL & HUE ADJUSTMENT WIDTH	Video level & hue knob range
	206 (FXE-100P)	VIDEO LEVEL & CHROMA PHASE ADJUSTMENT WIDTH	Video level & chroma phase knob range
	207	AUDIO CROSS POINT LEVEL	A/B bus audio cross point
	208	TRANSITION PATH	Transition speed
	209	H CENTER ADJUSTMENT	Horizontal sync phase
External interface and EDL	301	SYNC GRADE	Sync precision level
	302	COLOR FRAMING	Color framing or time code
	303	SYNC GRADE DISPLAY	Sync grade status display on/off
	304	RS232C BAUD RATE	RS-232C transmission rate
	306	INPUT EFFECT AUTO SELECT	Buttons or fader lever
	307	GPI1 TIMING	GPI1 pulse timing
	308	GPI2 TIMING	GPI2 pulse timing
	309	OVERFLOWED EDIT	EDL memory full recovery
	310	EDL SWITCH	Upload/download EDL data
VCR device constants	401	DEVICE TYPE PLAYER1	Player 1 device constant
	402	DEVICE TYPE PLAYER2	Player 2 device constant
	403	DEVICE TYPE RECORDER	Recorder device constant

a) FXE-100 only

Using the Setup Menu

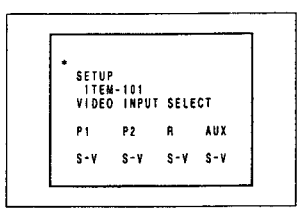
Proceed as follows to select menu items and change item settings.



Setup menu controls

1 Press the SCREEN button, turning on the MENU indicator.

2 Push the search dial in to select jog mode.
The most recently used setup menu item appears on the main monitor screen. The current setting flashes. If the item is set to the factory preset value, an asterisk (*) appears in the upper left corner of the screen.



(Continued)

3 While pressing the MENU button in the DIAL MENU section, rotate the search dial until the desired menu item appears on the screen.
Release the MENU button to select the item. The current setting flashes.
If the current item has more than one parameter item (for example P1, P2, R and AUX in menu item 101 VIDEO INPUT SELECT), rotate the search dial without pressing the MENU button until the desired parameter setting begins flashing.
"MENU" is displayed in the upper right corner of the screen while the MENU button is pressed.

4 While pressing the DATA button in the DIAL MENU section, rotate the search dial until the desired setting appears.
The setting flashes. "DATA" is displayed in the upper right corner of the screen while the DATA button is pressed.

5 Press the SET button.
The setting selected in step 4 is confirmed. "SET" is displayed in the upper right corner of the screen while the SET button is pressed.

6 Press the SCREEN button to extinguish the MENU indicator.

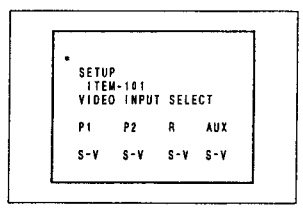
Setup Menu Items

Items marked with an asterisk (*) are set to the factory preset value.

System Configuration

101 VIDEO INPUT SELECT

Select the type of input signals for the VIDEO INPUT connectors. Rotate the search dial only to select composite video or S-video for player 1, player 2, the recorder and auxiliary source 1.

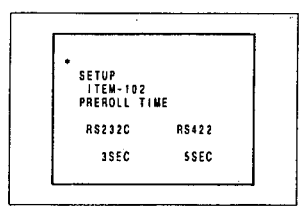


Settings

V	Composite video signals
*S-V	S-video signals

102 PREROLL TIME

Select the preroll time for the connected VCRs. Settings may be made separately for VCRs connected to the RS-232C and RS-422 connectors. Select RS232C or RS422 by rotating the search dial only.



Settings

RS-232C connector

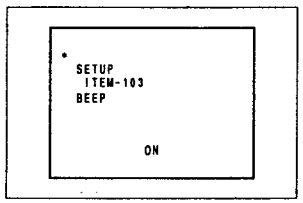
*3SEC	3 seconds
5SEC	5 seconds
7SEC	7 seconds
10SEC	10 seconds

RS-422 connector

3SEC	3 seconds
*5SEC	5 seconds
7SEC	7 seconds
10SEC	10 seconds

103 BEEP

Choose whether or not to beep when a key is pressed, and when an edit point is passed during preview or automatic edit execution.

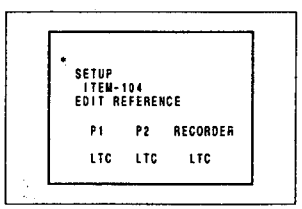


Settings

OFF	Do not beep.
*ON	Beep.

104 EDIT REFERENCE

Select the time data type for player 1, player 2 and the recorder. Select LTC (longitudinal time code) or CTL by rotating the search dial only.



Settings

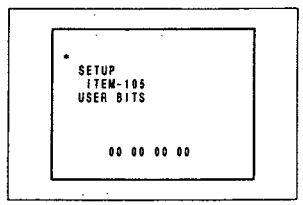
*LTC
CTL

Note

There is a greater possibility that errors will occur during high-speed tape transport (for example, between the preroll point and the IN point) when CTL signals are used. This item should normally be set to LTC unless there is no time code recorded on the tape.

105 USER BITS

You can freely use the 32 bits in the user bits section of time code to record information such as dates or cut numbers. Rotate the search dial only to select two-digit hexadecimal values between 00 and FF.

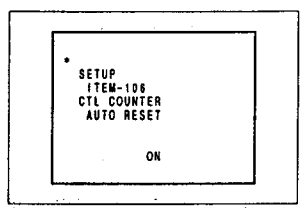


Settings

*00
00 to FF

106 CTL COUNTER AUTO RESET

Choose whether or not to automatically reset the CTL counter when the unit is turned on and off, and when tapes are ejected.



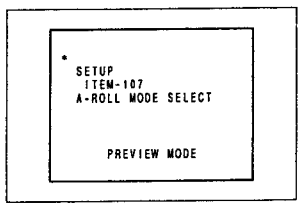
Settings

*ON	Reset.
OFF	Do not reset.

1-89

107 A-ROLL MODE SELECT

In A-roll editing, some recorder VCRs enter E-E mode before the IN point, making it impossible to read in a freeze frame. When this occurs, select PREVIEW MODE under this item before executing the edit.



Settings

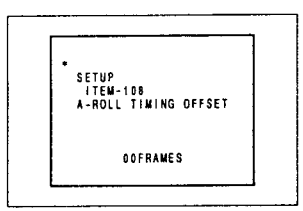
AUTO EDIT MODE	When AUTO EDIT/ END button is pressed, read in frame two frames before recorder IN point and execute edit immediately.
*PREVIEW MODE	When AUTO EDIT/ END button is pressed, enter preview mode and read in playback frame one frame before recorder IN point. Then enter edit mode and begin recording.

Note

When this item is set to PREVIEW MODE the unit requires more time to execute an edit.

108 A-ROLL TIMING OFFSET

In A-roll editing, the frame before the recorder IN point is read into digital frame memory. But depending on the VCR in use, automatic freeze timing may be off by a certain number of frames. If the unit is unable to read in the correct freeze frame, use this item to specify an offset in frames between the correct frame and the frame which was actually read in. For example, if the frame actually read in was two frames after the IN point, set this menu item to –03 FRAMES to read in the frame one frame before the IN point.

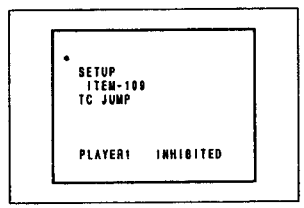


Settings

*00FRAMES	Do not adjust timing.
–10 to 10 FRAMES	Adjust timing by number of frames.

109 TC JUMP

Select whether or not to continue editing when non-consecutive time codes are discovered between the preroll point and the IN point. To select settings for player 1, player 2, and the recorder, rotate the search dial only while pressing the DATA button.



Settings

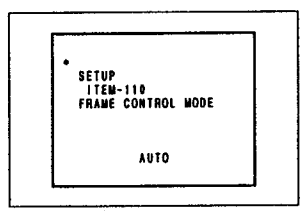
ALLOWED	Continue editing despite non-consecutive time codes.
*INHIBITED	Do not continue editing.

Note

When time codes are not consecutive, it takes longer to cue up an edit point.

110 FRAME CONTROL MODE (FXE-100 only)

Select the frame control mode for time code processing (drop-frame or non-drop frame mode).



Settings

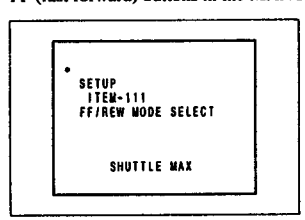
*AUTO	Use the mode found on recorder tape.
DF	Drop-frame mode.
NDF	Non-drop frame mode.

Note

If you execute a first edit when this item is set to AUTO, time code is inserted in non-drop frame mode.

111 FF/REW MODE SELECT

Select the high-speed transport mode selected by pressing the REW (rewind) and FF (fast forward) buttons in the MANUAL CONTROL section.



Settings

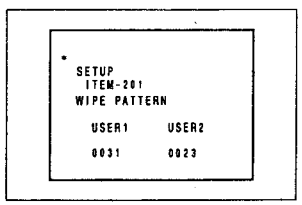
*SHUTTLE MAX	Maximum-speed shuttle mode
FF/REW	Fast forward and rewind mode

Switcher

201 WIPE PATTERN

Select the patterns to assign to the USER1 and USER2 buttons in the WIPE PATTERN section by choosing a four-digit decimal pattern code number for each button. Rotate the search dial only to select the button for assignment.

For wipe pattern code numbers, see the table in the Appendixes (page A-11).

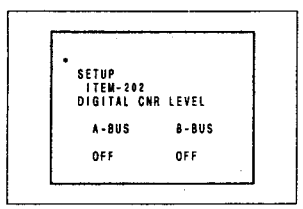


Default user button assignments

USER 1	USER 2
EXPLOSION 0031	0023

202 DIGITAL CNR LEVEL

Select the color noise reduction (CNR) level for video read into digital frame memory. Rotate the search dial only to select settings for bus A and bus B.



Settings

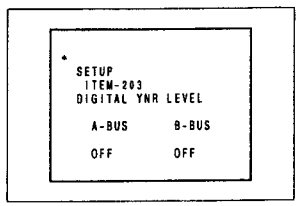
*OFF	No CNR
LOW	Low level
MIDDLE	Middle level
HIGH	High level

Note

If CNR is set to HIGH, a faint color shadow remains from the previous frame when frames are switched. This is not a malfunction in the unit.

203 DIGITAL YNR LEVEL

Select the luminance (Y signal) noise reduction level for video read into digital frame memory. Rotate the search dial only to select settings for bus A and bus B.

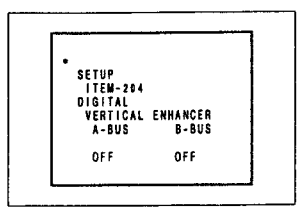


Settings

*OFF	No YNR
VERY LOW	Very low level
LOW	Low level
MIDDLE	Middle level
HIGH	High level

204 DIGITAL VERTICAL ENHANCER

Select the trigger level for the vertical enhancement circuits, which produce sharp edges in the picture. Rotate the search dial only to select settings for bus A and bus B.

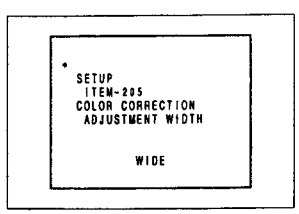


Settings

*OFF	No vertical enhancement
VERY LOW	Very low level
LOW	Low level
MIDDLE	Middle level
HIGH	High level

205 COLOR CORRECTION ADJUSTMENT WIDTH

Select the COLOR CORRECTION joystick range.

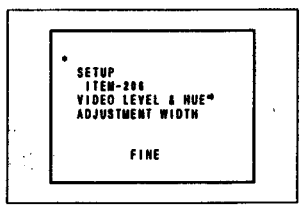


Settings

*WIDE	Coarse adjustment
FINE	Fine adjustment

206 VIDEO LEVEL & HUE ADJUSTMENT WIDTH (FXE-100) VIDEO LEVEL & CHROMA PHASE ADJUSTMENT WIDTH (FXE-100P)

Select the adjustment range for the HUE (FXE-100) or CHROMA PHASE (FXE-100P), LUMINANCE and CHROMINANCE knobs in the VIDEO LEVEL & HUE (FXE-100) or VIDEO LEVEL & CHROMA PHASE (FXE-100P) section.



a) FXE-100: VIDEO LEVEL & HUE
FXE-100P: VIDEO LEVEL & CHROMA PHASE

Settings

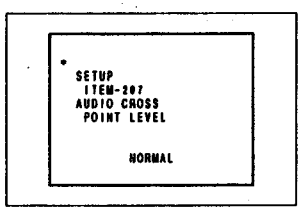
WIDE	Coarse adjustment
*FINE	Fine adjustment

Note for FXE-100P

When adjusting the color subcarrier phase, use a vectorscope to measure the adjustments.

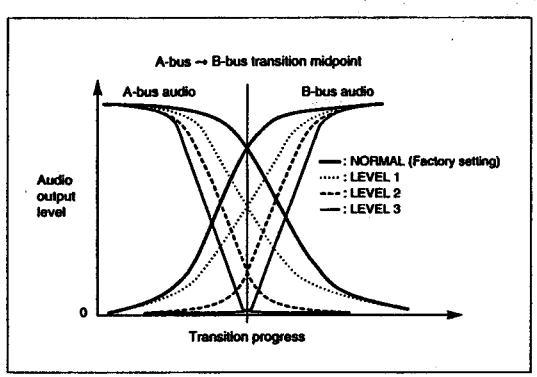
207 AUDIO CROSS POINT LEVEL

Select the audio cross point, or level at the transition midpoint where the audio signals overlap when switching between the two buses. Audio output is very low at the LEVEL 3 setting, and increases in volume for both the A and B buses from quiet at the LEVEL 2 setting to normal at the NORMAL setting.



Settings

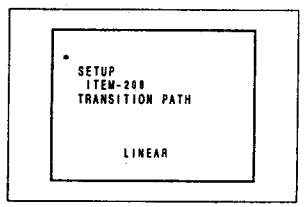
LEVEL 1	Rather low volume
LEVEL 2	Low volume
LEVEL 3	Very low volume
*NORMAL	Normal volume



Transition from bus A to bus B

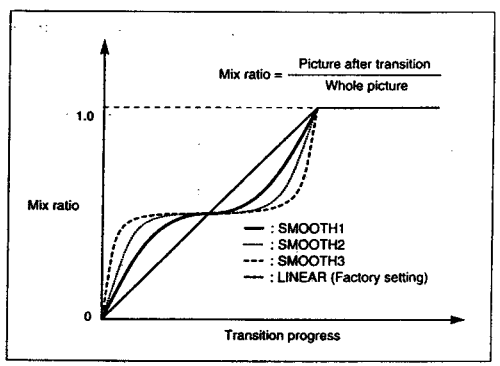
208 TRANSITION PATH

Select the speed at which video is switched during a transition. A-bus video and B-bus video are mixed at identical ratios under the SMOOTH1 to SMOOTH3 settings, and at a linear ratio under the LINEAR setting. The settings in this menu are especially effective when you have selected a mix as the transition effect.



Settings

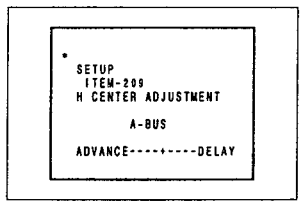
SMOOTH1	Switch quickly.
SMOOTH2	Switch rather quickly.
SMOOTH3	Switch slowly.
*LINEAR	Switch at a constant rate.



Transition path

209 H CENTER ADJUSTMENT

Adjust to control picture stability and horizontal position (horizontal sync phase). While pressing the DATA button, rotate the search dial counterclockwise to move the cross cursor toward ADVANCE (the picture shifts to the left), and clockwise to move it toward DELAY (the picture shifts to the right). Rotate the search dial only to select settings for bus A and bus B.



Settings

*Center	Do not adjust the phase.
ADVANCE	Advance the phase.
DELAY	Delay the phase.

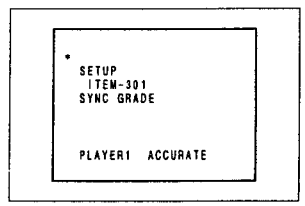
Note

Proceed carefully when adjusting the sync phase.

External Interface and EDL

301 SYNC GRADE

Select synchronizing precision for VCRs connected to this unit. Rotate the search dial only to select player 1, player 2 and the recorder.

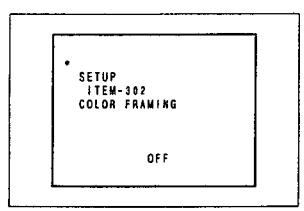


Settings

*ACCURATE	Synchronization is accurate to ±0 frames. The unit monitors VCR synchronization, and does not execute an edit until the VCRs are completely locked. If they cannot be synchronized after three preroll attempts, the accuracy is lowered to +/–1 FRAME.
+/– 1 FRAME	Synchronization is accurate to ±1 frame. Executes an edit if all checkpoints are accurate to within one frame. If VCRs cannot be synchronized after two preroll attempts, the accuracy is lowered to ROUGH.
ROUGH	Executes an edit as soon as sync signals coincide, however briefly. If VCRs cannot be synchronized after two preroll attempts, the accuracy is lowered to PREROLL & PLAY.
PREROLL & PLAY	No synchronization. Execute edit immediately after preroll.

302 COLOR FRAMING

Select whether color framing or time code should be given priority when recording on the master tape.



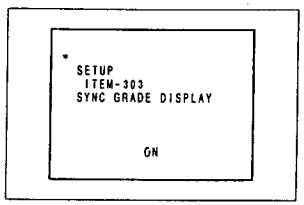
Settings

*OFF	Use time codes recorded on the master tape.
VTR SETTING	Use the color framing settings selected on the recorder VCR side.

1-93

303 SYNC GRADE DISPLAY

Select whether or not to include the VCR sync grade, set under menu item 301, in the main monitor status display.

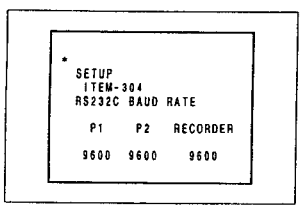


Settings

OFF	Do not display.
*ON	Display.

304 RS232C BAUD RATE

Select the data transmission rate for transmissions to equipment connected to the RS-232C connectors. Rotate the search dial only to set the rate for player 1, player 2 and the recorder.

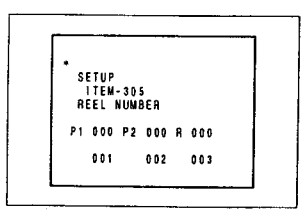


Settings

*9600	9600 bps
19200	19200 bps

305 REEL NUMBER

The number shown to the right of each VCR (P1, P2 and R) is the reel number currently assigned in the EDL. Rotate the search dial only to set reel numbers for tapes loaded in player 1, player 2 and the recorder.



Settings

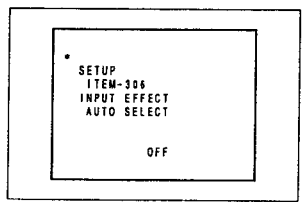
0 to 9	Most significant digit
00 to 99	Two least significant digits

Default settings

P1	001
P2	002
R	003

306 INPUT EFFECT AUTO SELECT

Either the fader lever or the A-BUS and B-BUS buttons in the INPUT EFFECT section can be used to select the bus affected by input effects. Use this menu item to choose automatic selection by the fader lever, or manual selection by the A-BUS and B-BUS buttons.

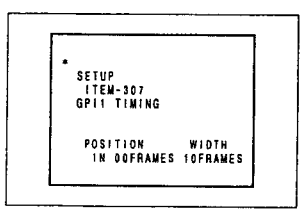


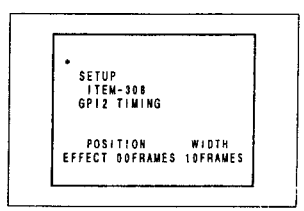
Settings

*OFF	Input effect bus selected by A-BUS and B-BUS buttons, regardless of fader lever position.
ON	Input effect bus selected by fader lever position. A-BUS and B-BUS buttons are disabled and do not light when pressed.

307 GPI1 TIMING
308 GPI2 TIMING

Select the timing and pulse width of pulses output from the GPI1 OUT and GPI2 OUT connectors. Pulses may be output at the IN point, at the effect starting point, or at the OUT point, as selected here.
When this menu is displayed, one of the IN, EFFECT or OUT settings will be visible and flashing. If, at this point, you press the DATA button and rotate the search dial, you can select the other settings. When you reach the desired setting, release the DATA button and the frame count begins to flash. In this state, you can rotate the search dial while pressing the DATA button to select an offset in frames between the IN, effect or OUT point and the point where the pulses are actually output. Or you can rotate the search dial only to select the pulse width.





(Continued)

Settings

Output points

*IN	IN point (GPI1 factory default)
*EFFECT	Effect starting point (GPI2 factory default)
OUT	OUT point

Output timing

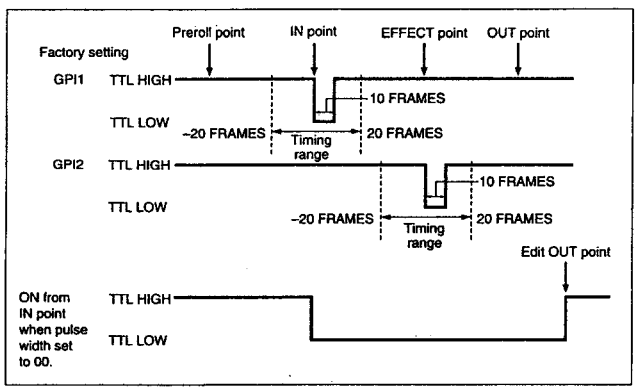
*00FRAMES
–20 to 20 FRAMES

Pulse width

*10FRAMES
00 to 10FRAMES[a]

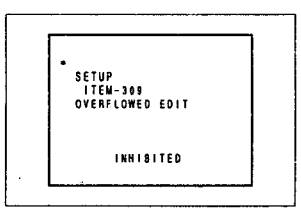
a) When set to 00, the GPI pulse remains ON until the end of the edit.

The range of selectable pulse timing offsets is as follows.



309 OVERFLOWED EDIT

Specifies how the unit should respond when an attempt is made to register a new edit when the EDL is already full (already contains 99 edits).

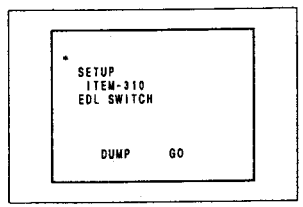


Settings

*INHIBITED	The new edit is not registered, and an error code is displayed in the time counter display.
OVERWRITE	Edit number 001 is overwritten by the new edit.
ALL CLEAN UP	All edits are deleted from EDL memory.

310 EDL SWITCH

Transmit or receive EDL data through the RS-232C connectors.
Display the DUMP item when you want to export data, or the LOAD item when you want to import data, and then press the SET button. Next rotate the search dial to select GO and press the SET button once more to begin the transmission.
To stop the transmission, rotate the search dial to select CANCEL and then press the SET button.



Settings

*DUMP	Transmit data.
LOAD	Receive data.

*GO	Begin transmission
CANCEL	Stop transmission

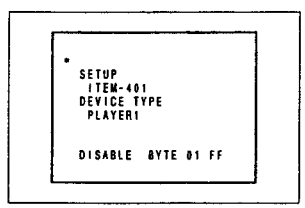
VCR Device Constants

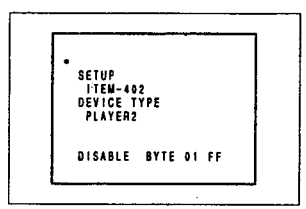
401 DEVICE TYPE PLAYER 1
402 DEVICE TYPE PLAYER 2
403 DEVICE TYPE RECORDER

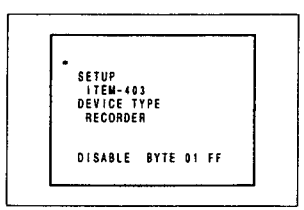
Using status signals sent by the VCR, the FXE-100 is able to automatically identify many commonly used VCRs, and to control tape transport for those VCRs by referring to an internal device constant table.
VCR device constants are made up of 15 data items, each item being expressed as a two-digit hexadecimal number.

For details, see "VCR constant data items" (page 8-21) and "Automatically detected VCRs and internal device constants" (page 8-22).

Normally it should not be necessary to set VCR constants manually. But depending on operating conditions and the type of VCR, the unit is sometimes unable to achieve the precise control needed for editing. In such cases, you can use these menu items to define new device constants for each VCR.
To define a device constant, set the DISABLE/ENABLE parameter to ENABLE, select the data byte (a decimal number between 00 and 15) which you want to modify, and then select a two-digit hexadecimal value for that byte.
When not using a newly defined device constant, return the DISABLE/ENABLE parameter to DISABLE.







Settings	
*DISABLE	Use the unit's device constant table instead of user-defined device constants.
ENABLE	Use user-defined device constants.

Item number	Value
BYTE 01 to 15 (decimal)	00 to FF (hexadecimal)

VCR constant data items

VCR constant data items

Item number	Setting	Meaning
BYTE 01 BYTE 02	Device type	Defines the VCR type. **Factory default:** BYTE 01: FF BYTE 02: FF
BYTE 03 BYTE 04	Minimum preroll time	Specifies the minimum preroll time required by the VCR in units of frames. The preroll time specified here is always used, even if setup menu item 102 PREROLL TIME is used to specify a shorter time. BYTE 03 is the most significant byte. **Factory default:** 00 5A (FXE-100) or 00 55 (FXE-100P)
BYTE 05	Edit delay	Corrects for the delay in frames from the time when a REC command is sent to the VCR until the time when recording actually starts. **Factory default:** 05
BYTE 06	E-E delay	Corrects for the delay in frames from the time when a PB/EE command is sent to the VCR until the time when it actually enters preview mode. **Factory default:** 05
BYTE 07	Overrun delay	Corrects for the overrun in frames past a specified preroll point in a preroll stop. **Factory default:** 03 (FXE-100) or 02 (FXE-100P)
BYTE 08	Trajectory	Specifies the optimum speed curve for preroll. Higher values are required for VCRs with lower positionability. **Factory default:** 84
BYTE 09	Time code read delay	Corrects for the delay in frames from the time when a VCR receives a tape transport command until the time when it is able to read time code. **Factory default:** 0A
BYTE 10	Pinch-on delay	Corrects for the delay in frames from the time when a VCR receives a tape transport command until it actually begins moving the tape. **Factory default:** 08 (FXE-100) or 07 (FXE-100P)
BYTE 11	Post-sync delay (–)	For the transition to playback after synchronization, specifies the optimum command delay in frames for servo-lock from lower speeds. **Factory default:** FB
BYTE 12	Post-sync delay (+)	For the transition to playback after synchronization, specifies the optimum command delay in frames for servo-lock from higher speeds. **Factory default:** 00
BYTE 13	MODE 1	Bits 1 to 7: Specify the maximum framing value permitted by the VCR format. 0: 2-field lock 1: 4-field lock 3: 8-field lock Bit 8: Specifies whether or not the VCR permits CTL (timer) interpolation of time code. 1: Possible 0: Not possible **Factory default:** 80
BYTE 14	Mode 2	Bit 1: Specifies whether color framing status from the VCR is enabled or disabled. 1: Enabled 0: Disabled Bits 2 to 8: Specify the maximum time in frames until VCR frame lock. **Factory default:** 2E (FXE-100) or 2A (FXE-100P)
BYTE 15	Max preroll speed	Specifies the maximum tape speed during preroll as a multiple of normal tape speed. When set to FF, the speed is the same as fast forward and rewind speed. **Factory default:** FF

Automatically detected VCRs and internal device constants

The FXE-100/100P is able to detect VCRs in the following table automatically, and to control them using the constant values (hexadecimal) in data items 3 through 15.

FXE-100 internal device constants

Data item / VCR type	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
VO-9800	10	48	00	96	08	08	04	0C	0A	04	FF	00	00	78	08
VO-9850	10	4C	00	96	08	08	04	0C	0A	04	FF	00	00	78	08
SVP-9000	10	28	00	96	08	08	05	8A	0A	04	FF	00	00	78	0A
SVO-9600	10	2C	00	96	08	08	05	8A	0A	04	FF	00	00	78	0A
PVW-2600	20	40	00	96	05	05	03	04	0A	08	FB	00	81	19	FF
PVW-2800	20	41	00	96	05	05	03	04	0A	08	FB	00	81	19	FF
PVW-2650	20	42	00	96	05	05	03	84	0A	08	FB	00	9D	19	FF
UVW-1600	20	50	00	5A	05	05	03	84	0A	08	FB	00	80	2E	FF
UVW-1800	20	51	00	5A	05	05	03	84	0A	08	FB	00	80	2E	FF
EVO-9800/9800A	80	08	00	96	08	08	07	94	0A	07	FC	00	00	5A	07
EVO-9850	80	0C	00	96	05	05	07	80	0A	06	FC	00	00	5A	0A

FXE-100P internal device constants

Data item / VCR type	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
VO-9800P	11	48	00	7D	08	08	04	0C	0A	04	FF	00	01	64	08
VO-9850P	11	4C	00	7D	08	08	04	0C	0A	04	FF	00	01	64	08
SVP-9020	11	28	00	7D	08	08	05	8A	0A	04	FF	00	01	4B	0A
SVO-9620	11	2C	00	7D	08	08	05	8A	0A	04	FF	00	01	4B	0A
PVW-2600P	21	40	00	7D	05	05	03	04	0A	07	FF	00	83	31	FF
PVW-2800P	21	41	00	7D	05	05	03	04	0A	07	FF	00	83	31	FF
PVW-2650P	21	42	00	7D	05	05	03	84	0A	08	FB	00	9F	19	FF
UVW-1600P	21	50	00	55	05	05	02	84	0A	07	FB	00	80	2A	FF
UVW-1800P	21	51	00	55	05	05	02	84	0A	07	FB	00	80	2A	FF
EVO-9800P	81	08	00	7D	08	08	08	8E	0A	07	FC	00	01	5B	07
EVO-9850P	81	0C	00	7D	05	05	07	80	0A	0A	FC	FE	01	4C	0A

For more information about connecting VCRs other than those listed above, please contact qualified Sony service personnel.

1-97

Error Messages

When you try to perform an illegal operation, or when there is a problem with the connected VCRs, an error code is shown in the appropriate time counter display and an error message is shown in the main monitor status display. Take the action shown below to correct the problem.

Note

Error messages use the following abbreviations to refer to VCRs.
P1: Player 1
P2: Player 2
R: Recorder

Error code	Error message	Meaning	Action to take
01	CANNOT CONTROL DUE TO VTR LIMITATION	A limitation on the VCR side prevented execution of an edit setting.	Consult your VCR manuals and execute the edit again after removing the limitation.
02	CANNOT CUE UP P1, P2, R	The specified edit point cannot be cued up.	Check whether the edit point exists on the tape. If time code data on the tape is discontinuous, use setup menu item 109 TC JUMP to select discontinuous time code for the VCR, then try to cue up again.
03	CANNOT EXECUTE P1, P2, R	Edit execution began but could not be completed.	Check the VCR(s) which caused the failure.
04	CANNOT PRESET TIME CODE P1, P2, R	The unit cannot preset time code because VCR time code switches are set to prevent it.	• Set VCR switches to allow the unit to preset time code. • Check to be sure that the VCR supports time code recording.
05	CANNOT READ TIME CODE P1, P2, R	Time code could not be read when the MARK IN or MARK OUT button in the TIME MARK section was pressed.	Check the time code selected under setup menu item 104 EDIT REFERENCE.
06	CANNOT RECORD	Recording did not start when the AUTO EDIT/END button or the REC button in the MANUAL CONTROL section was pressed.	• Check to be sure that the tape is not write inhibited. • Check to be sure that the VCR connected to the recorder connector on the connector panel supports recording as well as playback.
07	CANNOT SYNCHRONIZE P1, P2, R	The listed VCRs could not be synchronized at the specified precision.	Use setup menu item 301 SYNC GRADE to lower the synchronizing precision for the listed VCRs.
08	CODE CONFLICTED P1, P2, R	Conflicting data was entered in the setup menu.	Enter the data again, removing the conflict.
09	DEFINE DURATION	An attempt was made to execute an edit without setting a duration for auxiliary source 1.	Set the duration for auxiliary source 1 (AUX).
10	DEFINE EDIT MODE	Edit execution was attempted without selecting an edit mode.	Select an edit mode.
		The AUDIO SPLIT button was pressed to perform a split edit in assemble mode.	Select insert mode to perform a split edit.

Error code	Error message	Meaning	Action to take
11	DEFINE IN POINT	Edit execution was attempted without defining a source IN point.	Define the IN point.
12	DEFINE OUT POINT	An attempt was made to register an edit in the EDL without defining a recorder OUT point. Or edit execution was attempted using an invalid recorder OUT point.	Define a valid recorder OUT point.
13	EDIT NOT FOUND	In an edit recall operation, the specified edit could not be found in the EDL.	Specify a different edit number.
14	EDL ERROR	The EDL may be corrupt.	Check the contents of the EDL.
15	ERROR	An invalid operation was attempted, or invalid data was entered.	Check the operation, or re-enter the data.
16	EDL COMM ERROR	An error occurred during communications with equipment connected to the EDL IN/OUT connector.	Check the external communications program to be sure that it is using the correct data transmission protocol (*see page 7-11*).
17	ILLEGAL FADE TIME	The fade in transition time is longer than the FROM source duration.	Reset the fade in transition time to a value shorter than the FROM source duration.
		The fade out transition time is longer than the TO source duration.	Reset the fade out transition time to a value shorter than the TO source duration.
18	ILLEGAL SOURCE	An invalid source was specified.	Specify a valid source.
19	ILLEGAL TRANS TIME	The effect transition time is longer than the TO source duration.	Reset the effect transition time to a value shorter than the TO source duration.
20	MEMORY FULL	An attempt was made to register an edit in the EDL when EDL memory was already full.	Transfer unneeded edits to external equipment, then delete them from the EDL.
21	ROM ERROR	A checksum error occurred in the system program.	There may be an error in system firmware. Contact a Sony service representative.
22	UNMOUNTED REEL NUMBER P1, P2, R	Reel numbers specified for an edit recall operation could not be found on any of the current sources.	To execute a recalled edit, mount the required reels on the VCRs and specify the reel numbers using setup menu item 305 REEL NUMBER.

1-98

In Case of Trouble

If any difficulty should arise during operation, first check the power and connections, then go through the following list. Should the difficulty persist, contact your Sony dealer or a Sony service representative.

Problem	Possible causes and remedies
No picture on the monitor.	• Make sure that the VCRs and monitors are turned on. • Check connections to external equipment[a] *(see "Connections", page 3-3).* • Make sure that the VCRs are in playback mode *(see "Controlling the VCRs", page 4-2).*
No signals from equipment connected to input connectors.	Check setup menu item 101 VIDEO INPUT SELECT. If you have connected a source to the VIDEO INPUT connectors, the setting should be V, for composite video signals. (The factory default setting is S-V, for S-video signals.)
The wrong video is shown on the monitor.	• Select the desired signals with the buttons in the VIDEO INPUT SELECT section. • Check video input connections [a].
The monitor shows only a grey background.	• Check that cassettes are loaded in the players. • A button in the VIDEO INPUT SELECT section may have selected a video input connector with no video input.
The monitor shows only a white or black background.	• If the BKGD button in the VIDEO INPUT SELECT section is lit, press to turn it off. • If the WHITE FADE or BLACK FADE button in the EFFECT TRANSITION section is lit, press to turn it off.
Video quality is poor.	• After verifying that there is no problem with the tape, adjust the video with the knobs in the VIDEO LEVEL & HUE section *(see "Adjusting Video Signals", page 4-15).* • Verify that the posterization effect is off (the POSTRZ button in the INPUT EFFECT section is off). • Verify that the zoom effect is off (the ZOOM button in the INPUT EFFECT section is off). • Verify that coarsest or finest mosaic is not being applied. If the MOSAIC button is lit, try pressing the '+' or '–' button.
The wrong audio signals are heard.	• Select the right signals with the buttons in the AUDIO INPUT SELECT section. • Check audio input connections [a].
There is no input from the microphone.	If the AUX 2/MIC switch in the audio mixer section is set to AUX 2, set it to MIC.
There is no input from auxiliary source 2.	If the AUX 2/MIC switch in the audio mixer section is set to MIC, set it to AUX 2.
Audio volume is too loud or too soft.	Adjust the volume *(see "Adjusting Audio Levels", page 4-16).*
The audio is distorted.	If the audio input connectors on this unit are connected to XLR 3-pin connectors on the audio equipment, set the 600 Ω termination switches to ON.
The video switches too quickly or too slowly.	Set the effect transition time *(see "Setting the Transition Time", page 5-58).*
The fader lever doesn't move.	Extinguish the AUTO TRANS/PAUSE button *(see "Note on the fader lever", page 4-13).*

a) Check to be sure that all cables are firmly seated in the connectors.

Problem	Possible causes and remedies
The wrong mix type or wipe patterns are used.	If any unneeded buttons are lit in the MIX/EFFECT or WIPE PATTERN sections, press to turn them off.
How can I turn off the beep?	Set setup menu item 103 BEEP to OFF.
VCR cannot be controlled.	• Make sure that the VCR is turned on. • Check connections to the VCR[a] *(see "Connections", page 3-3).* • Turn the unit off, and then turn it on again after veryifying that the RS-422/RS232C switches on the connector panel are set to the appropriate positions for the VCR. • If the VCR's REMOTE/LOCAL switch is set to LOCAL, set it to REMOTE.
Nothing is shown in a time counter display.	• Make sure that the VCR is turned on. • Check connections to the VCR[a] *(see "Connections", page 3-3).* • If the VCR's REMOTE/LOCAL switch is set to LOCAL, set it to REMOTE.
Time counter display doesn't change.	The time counter does not change if time code or CTL signals are not recorded on the tape. Check by setting setup menu item 104 EDIT REFERENCE to CTL. If there is still no change in the time counter display, then there are no CTL signals recorded on the tape.
Auto edit or preview does not begin when the AUTO EDIT/END or PREVIEW button is pressed.	• The master tape cassette may be write inhibited. • Check connections to the VCRs[a] *(see "Connections", page 3-3).* • If the tape has played to the end, rewind it. • The VCR's input selection switch may be set incorrectly. • The VCR's NORMAL/EDIT switch may be set incorrectly. • In insert mode: — The wrong insert mode button may have been pressed *(see "Insert Mode", page 5-3).* — CTL signals must be recorded on the entire tape in order to conduct a preview or automatic edit. • In assemble mode: CTL signals must be recorded on the tape, at least around the first IN point. For a new tape, record black signals at the beginning of the tape *(see "Executing a first edit", page 5-7).* • Consult your VCR manuals if the VCR's AUTO OFF indicator is flashing.
In a preview or automatic edit, the actual edit points are not the ones I set.	• When using CTL time data to set edit points, you may have reset a time counter by pressing the RESET button on a counter display panel. • Depending on the VCR, the actual edit points may differ slightly from those set with this unit. Adjust using the TRIM– (=SHIFT + IN) and TRIM+ (=SHIFT + OUT) buttons *(see "Changing edit points" page 5-21).*
There is picture breakup between edits.	• There may be a break in CTL signals between the edits. • Using the REC button causes breakup in the picture after an edit. Connect edits using the AUTO EDIT/END button.
There are stripes on the monitor screen.	Guard band noise is sometimes seen during playback at speeds other than +1 times normal speed. This is not a malfunction.
The picture is unstable.	• There may be noise in the input signals from the VCR. Check by selecting another VCR. The picture may also be unstable if CTL signals on the tape are noisy or irregular. • Recorder video may be unstable when a search (high-speed playback) is carried out on a player. Stop the player, or put it into normal-speed playback mode. • The VCR may not be receiving the correct input of reference video or sync signals.

a) Check to be sure that all cables are firmly seated in the connectors.

1-99

In Case of Trouble

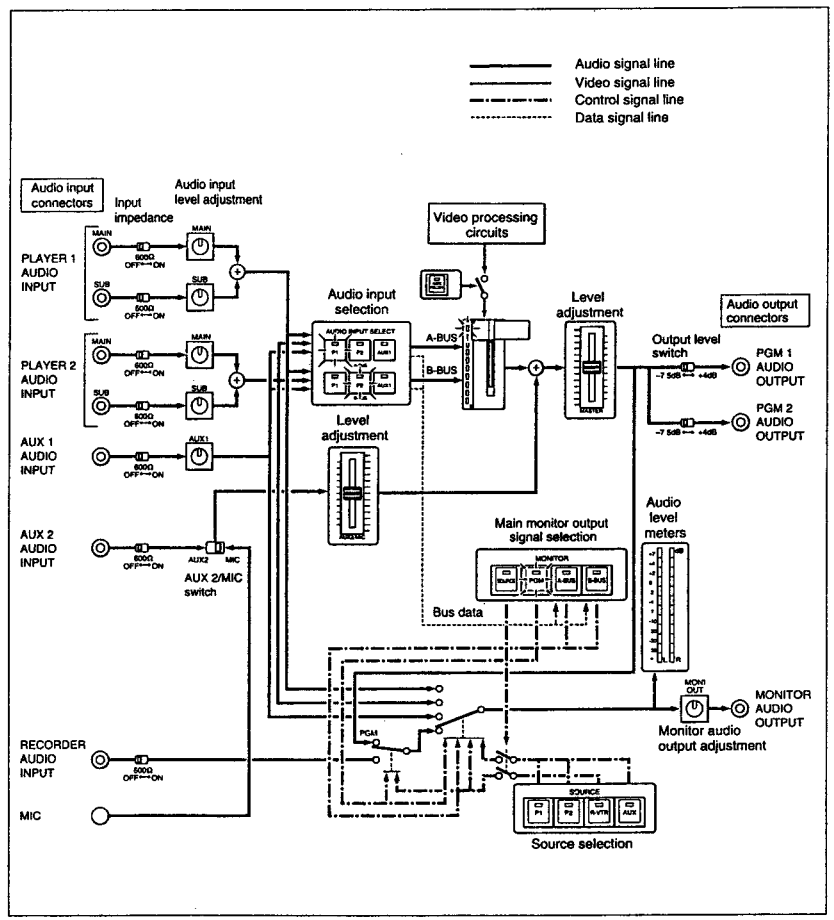
Problem	Possible causes and remedies
The picture drifts vertically.	Check the position of the monitor's vertical sync control.
The setup menu does not appear, even though the MENU indicator in the SCREEN section is lit.	Press the search dial to put it into the jog (depressed) position.
Vertical lines appear in the picture when the zoom input effect is used.	Vertical lines sometimes appear during zoom playback, depending on the capability of the VCR. This is not a malfunction.

Audio Signal Flow

The illustrations in this section show the flow of audio signals when program and source signal channels are selected for output.

Audio signal channels

The audio signal channels of this unit are as follows.



Audio signal channels

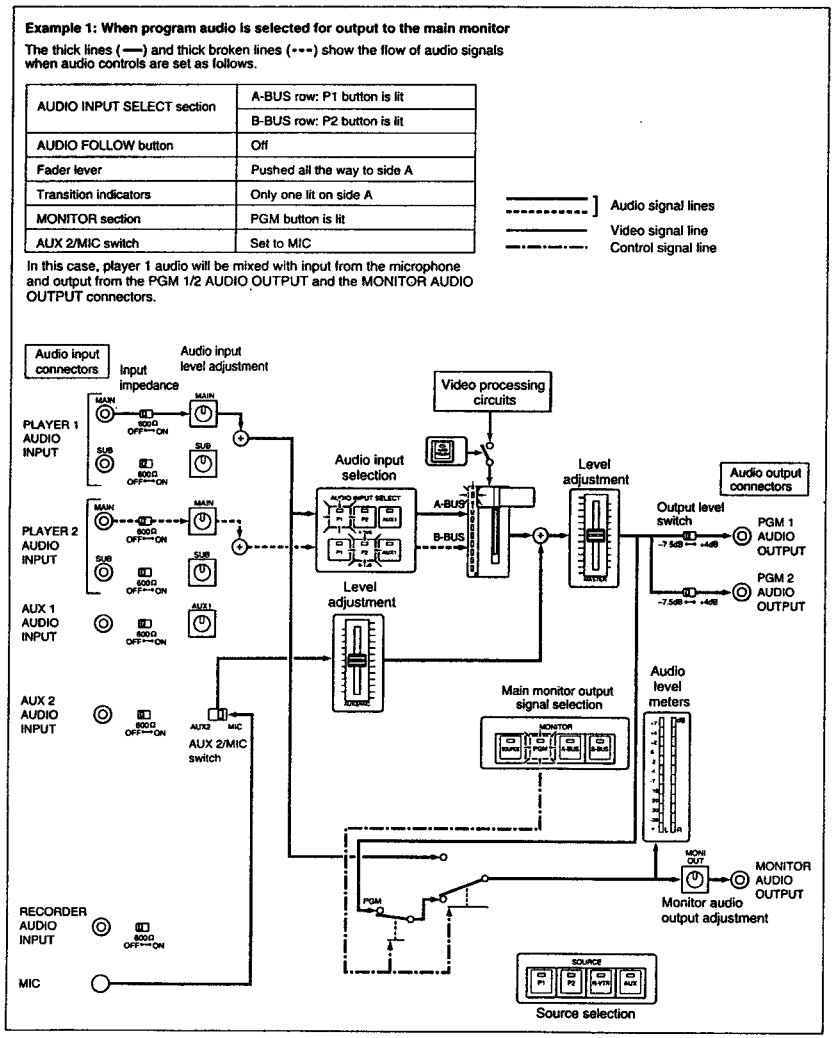
Flow of program and source audio

Example 1: When program audio is selected for output to the main monitor

The thick lines (——) and thick broken lines (- - -) show the flow of audio signals when audio controls are set as follows.

AUDIO INPUT SELECT section	A-BUS row: P1 button is lit
	B-BUS row: P2 button is lit
AUDIO FOLLOW button	Off
Fader lever	Pushed all the way to side A
Transition indicators	Only one lit on side A
MONITOR section	PGM button is lit
AUX 2/MIC switch	Set to MIC

In this case, player 1 audio will be mixed with input from the microphone and output from the PGM 1/2 AUDIO OUTPUT and the MONITOR AUDIO OUTPUT connectors.



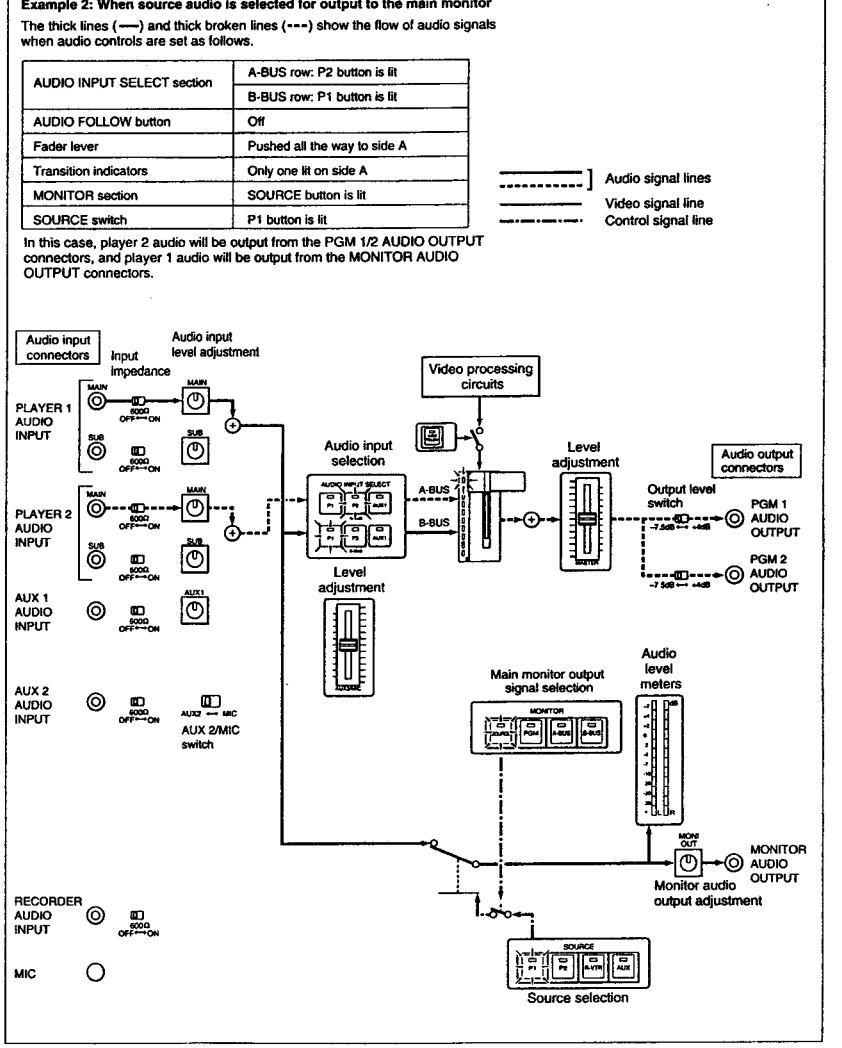
Audio signal flow when program audio is selected for output to the main monitor

Example 2: When source audio is selected for output to the main monitor

The thick lines (——) and thick broken lines (- - -) show the flow of audio signals when audio controls are set as follows.

AUDIO INPUT SELECT section	A-BUS row: P2 button is lit
	B-BUS row: P1 button is lit
AUDIO FOLLOW button	Off
Fader lever	Pushed all the way to side A
Transition indicators	Only one lit on side A
MONITOR section	SOURCE button is lit
SOURCE switch	P1 button is lit

In this case, player 2 audio will be output from the PGM 1/2 AUDIO OUTPUT connectors, and player 1 audio will be output from the MONITOR AUDIO OUTPUT connectors.

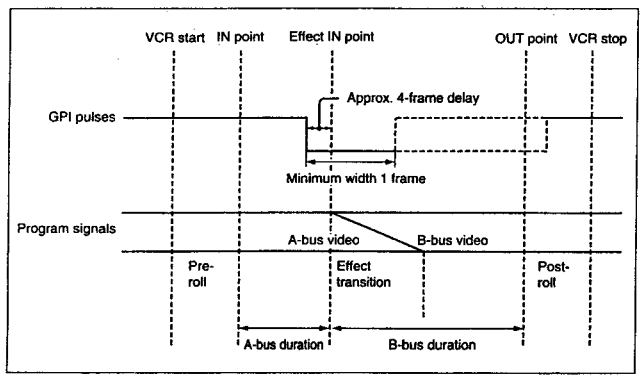


Audio signal flow when source audio is selected for output to the main monitor

GPI Interface Effect Timing

This unit's GPI interface allows you to use external devices to control the timing of effect transitions between A-bus and B-bus source signals.
However, there is a delay of approximately 4 frames between the time when an external device issues a GPI pulse and the time when the effect transition begins. If you need precise control over effect timing, refer to following illustration and adjust the timing of GPI pulses on the external device side.

GPI pulse specifications: TTL LOW level, minimum pulse width 1 frame



GPI interface effect timing

Wipe Patterns

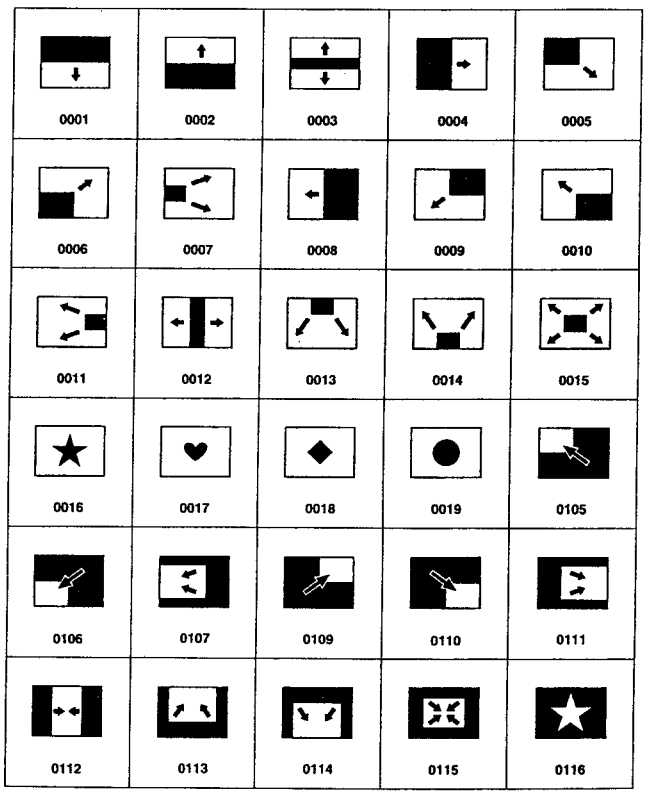
The illustrations in this section show the patterns which can be assigned to the USER 1 and USER 2 buttons in the WIPE PATTERN section, using setup menu item 201 WIPE PATTERN.

For details, see Chapter 8.

Pattern transitions

Arrows show wipe directions. In a transition from bus A to bus B, the wipe replaces bus-A video (white portion) with bus-B video (black portion) in the directions shown by the arrows.

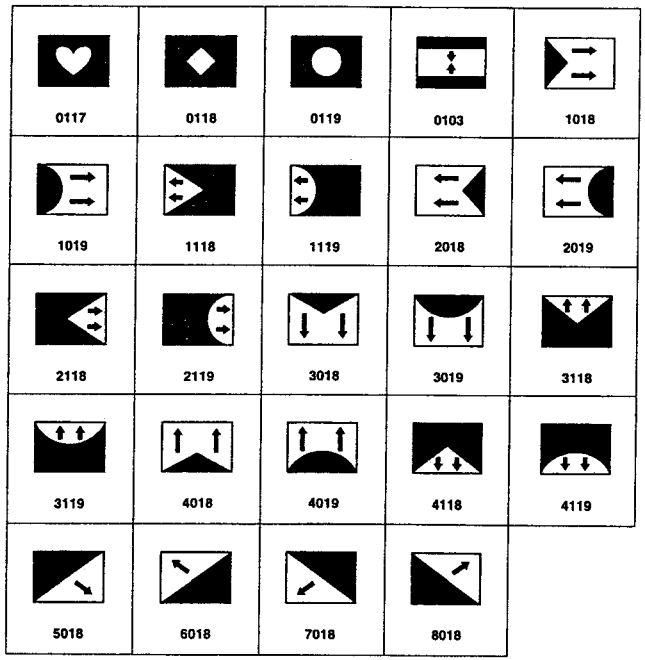
Basic patterns 1



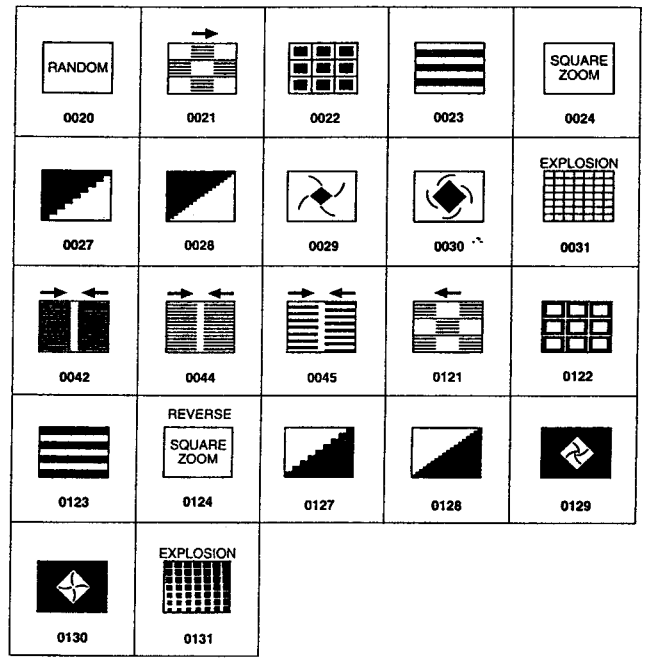
1-102

Wipe Patterns

Basic patterns 1 (Continued)



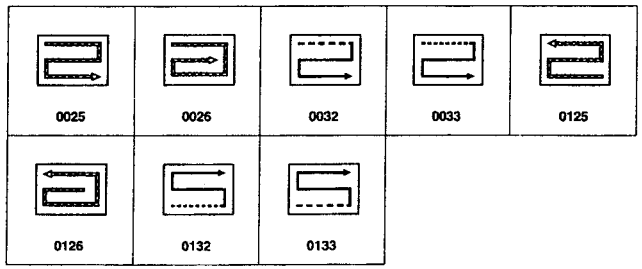
Basic patterns 2



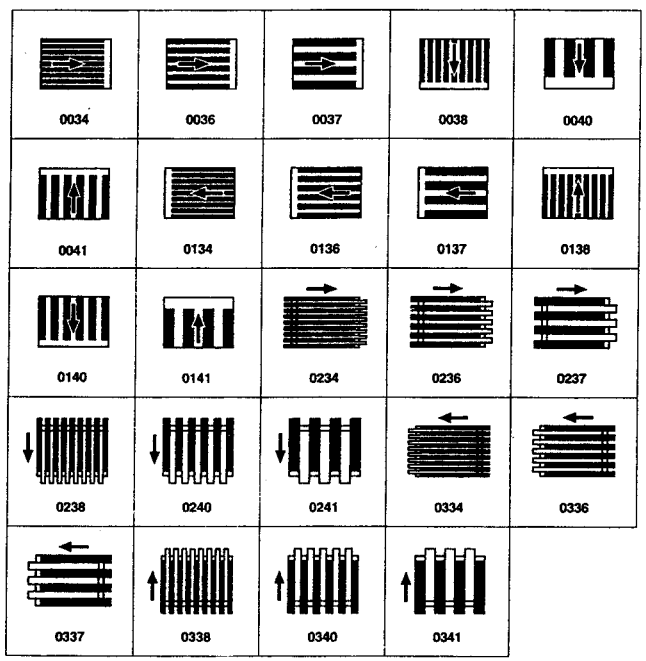
1-103

Wipe Patterns

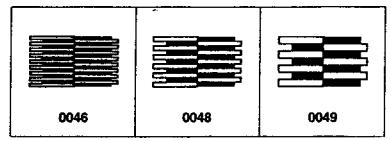
Matrix patterns



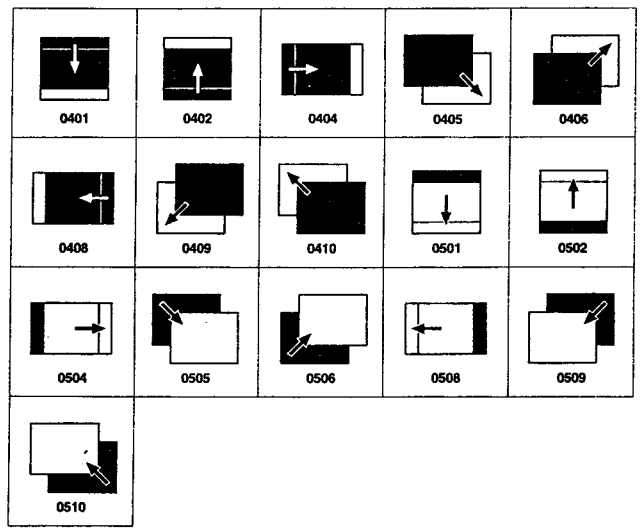
Split slide patterns



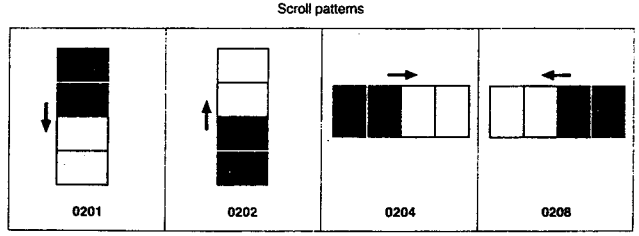
Interborder split patterns



Slide patterns



Scroll patterns

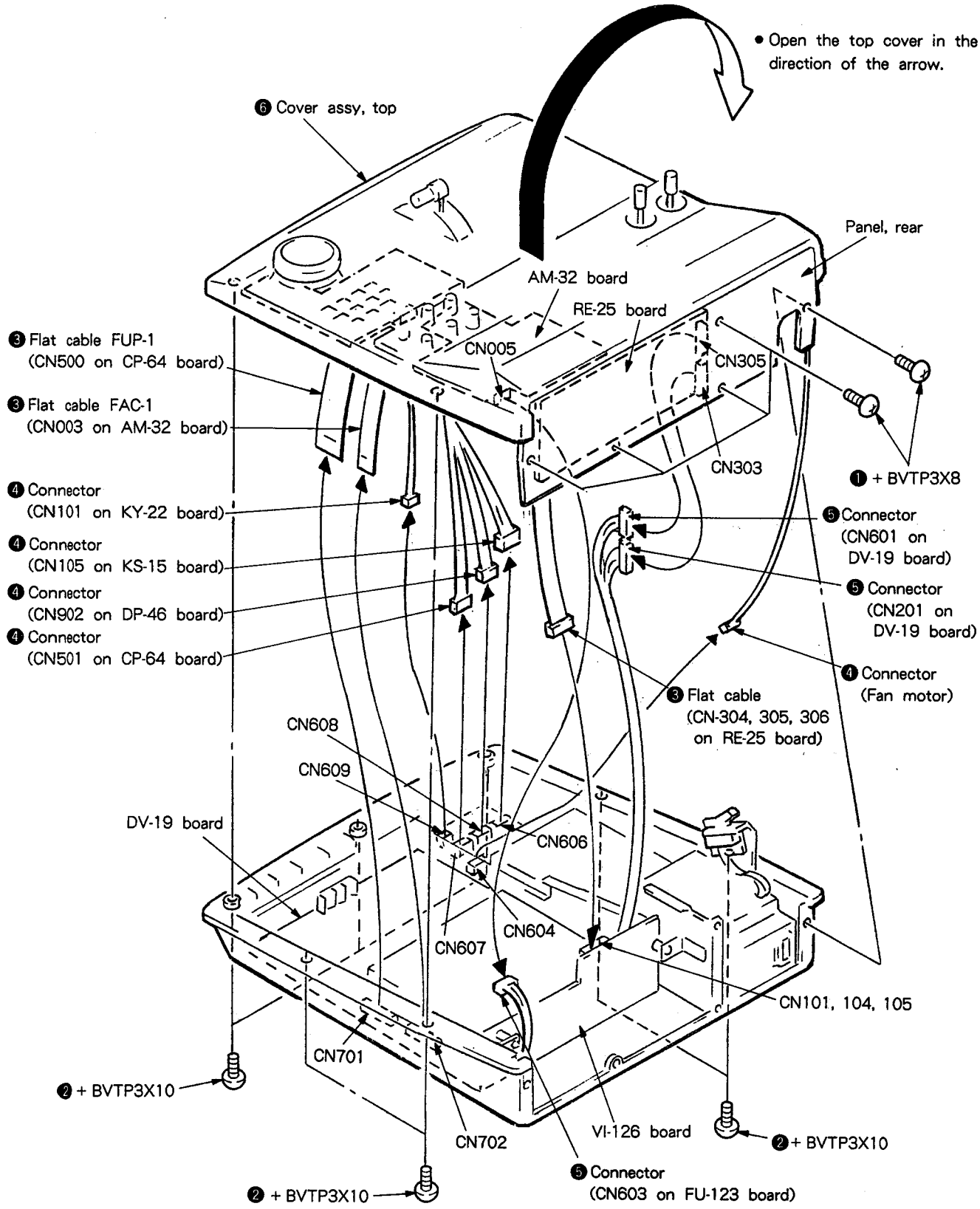


1-104 E

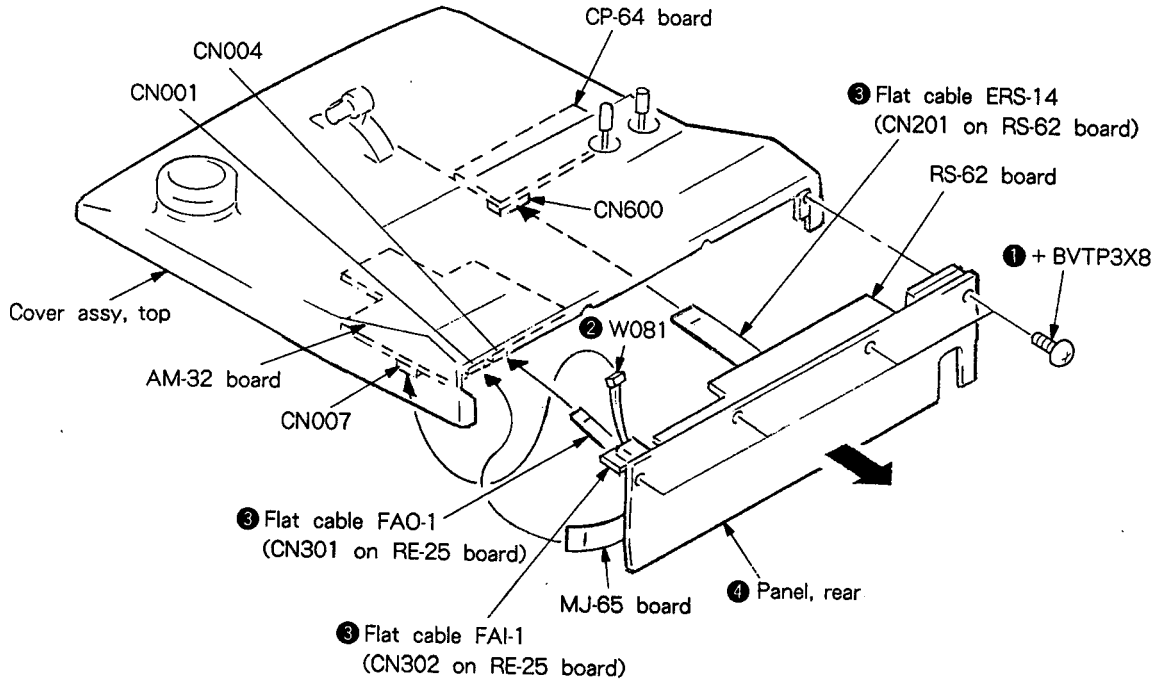
SECTION 2
DISASSEMBLY

NOTE : Follow the disassembly procedure in the numerical order given.

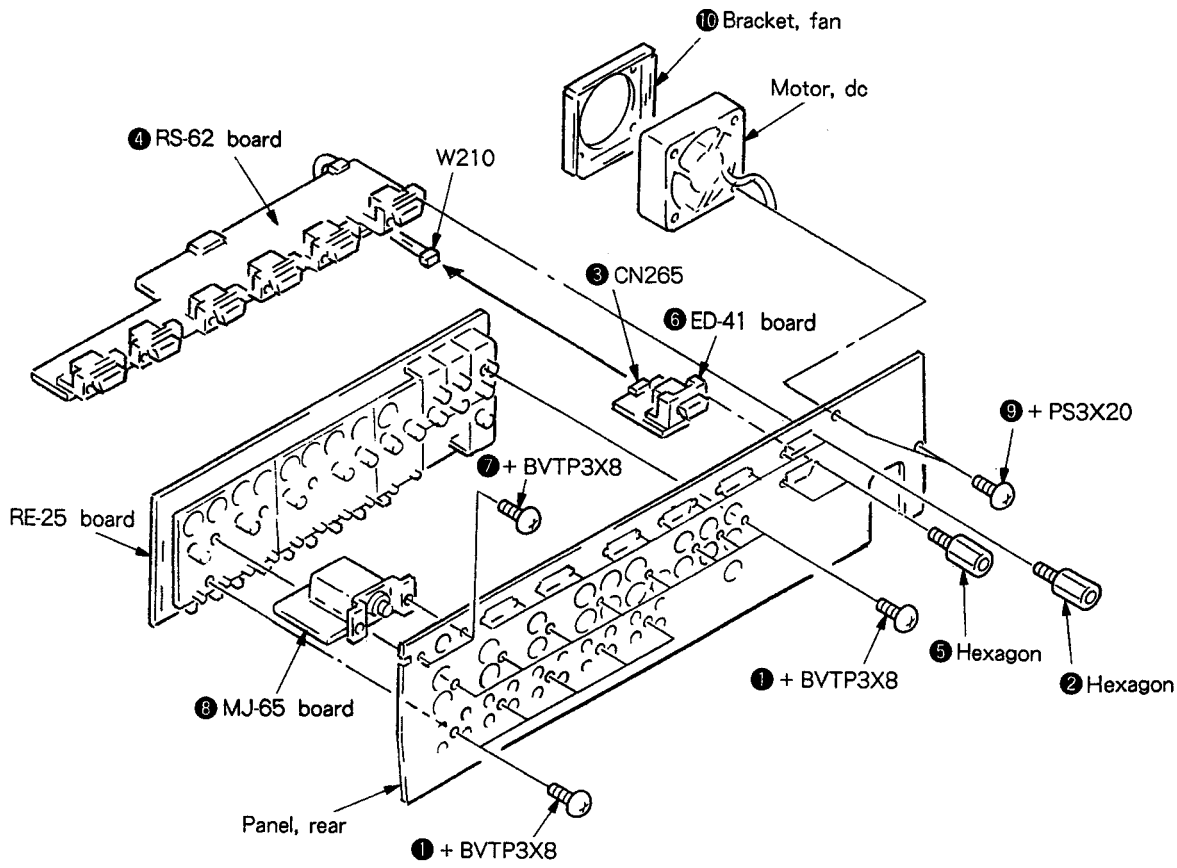
1. REMOVAL OF TOP COVER ASSY



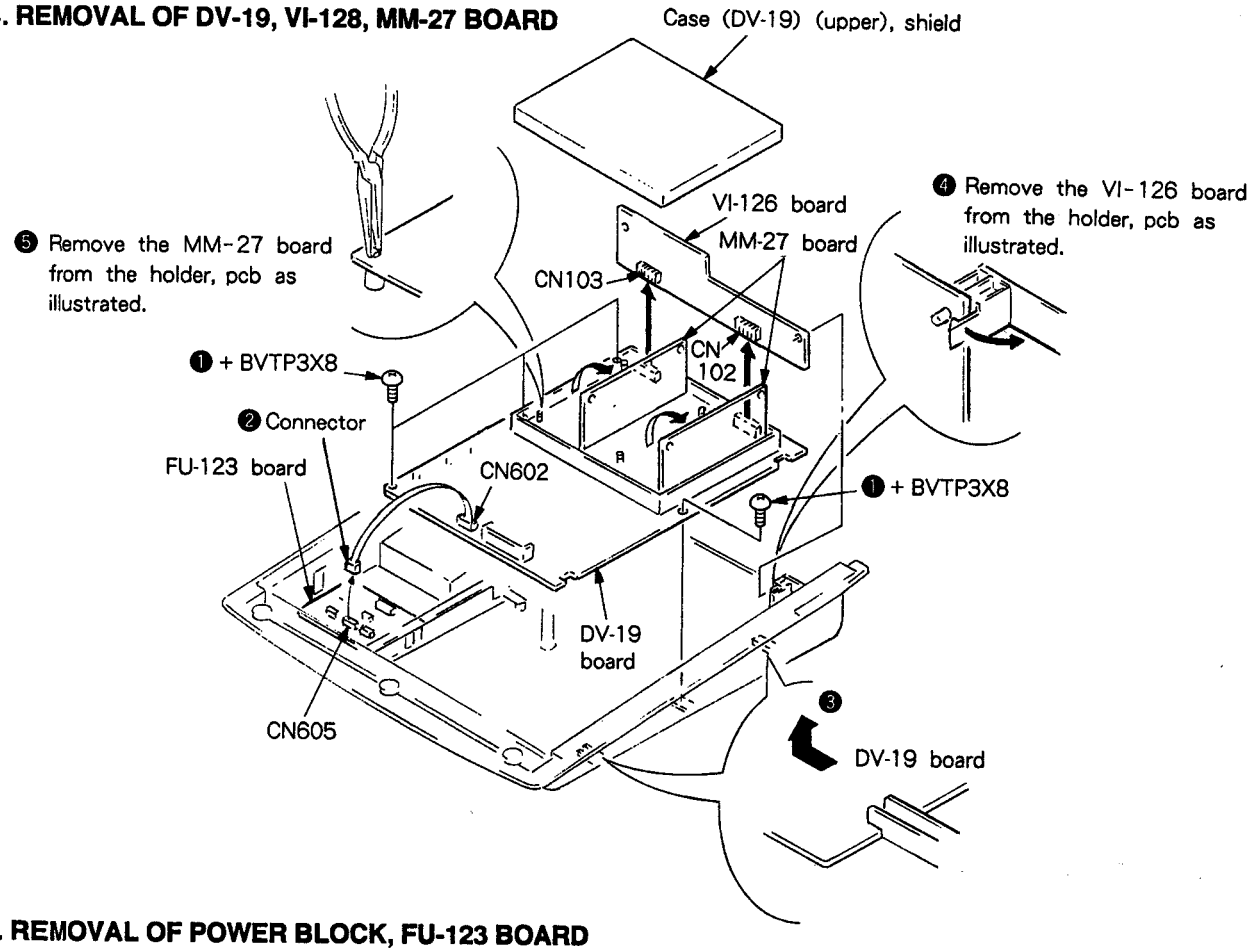
2. REMOVAL OF REAR PANEL



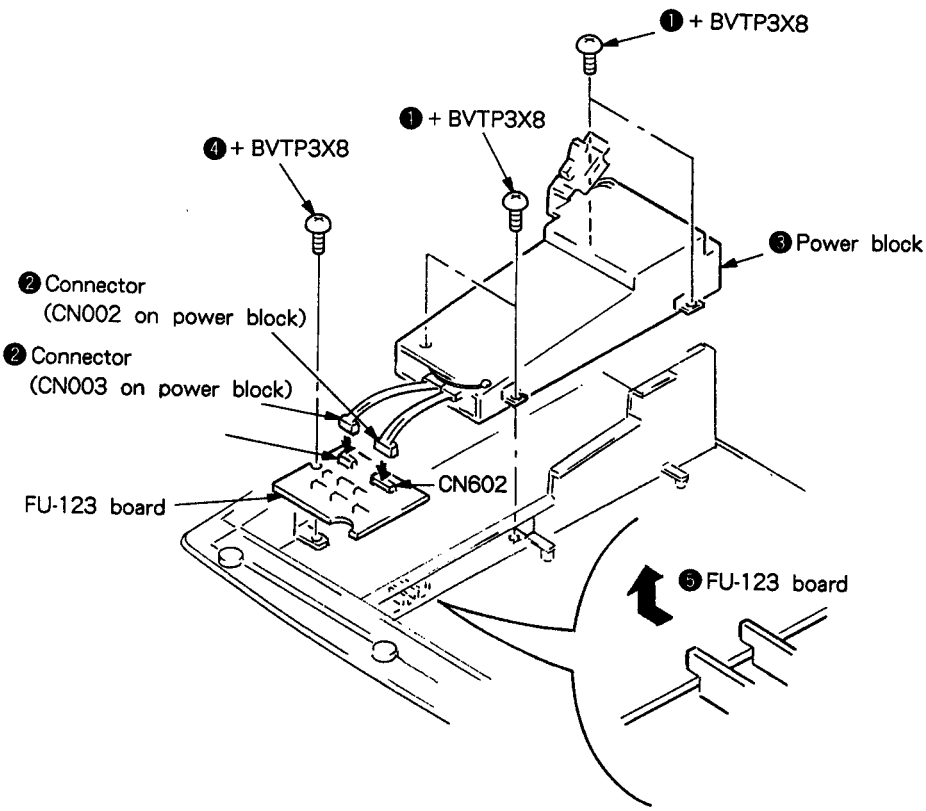
3. REMOVAL OF RE-25, RS-62, ED-41, MJ-65 BOARD AND DC MOTOR



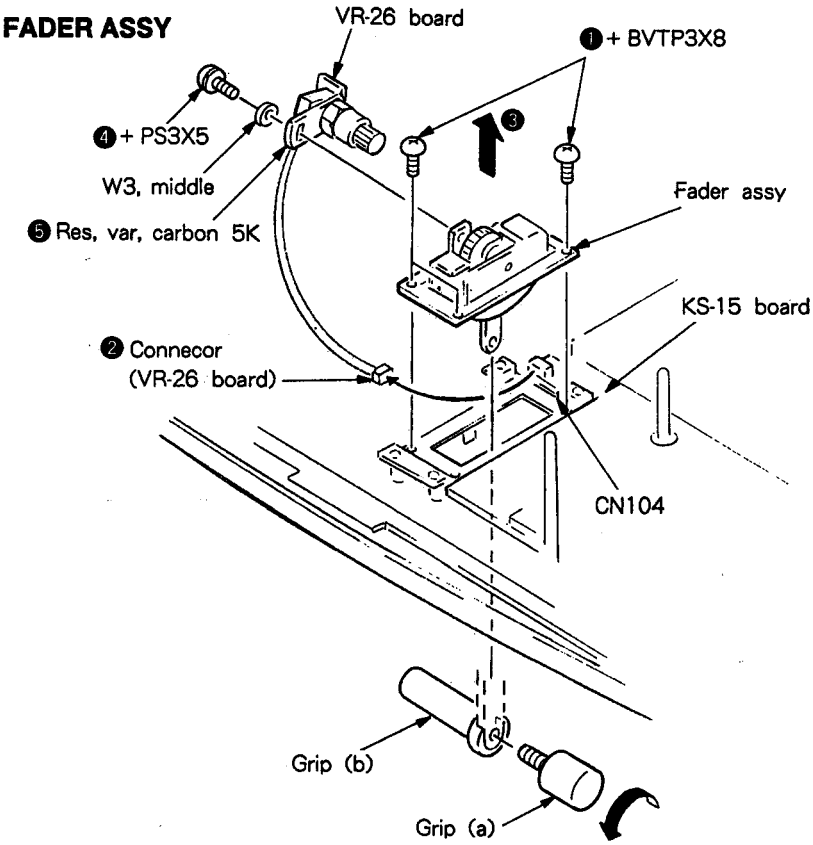
4. REMOVAL OF DV-19, VI-128, MM-27 BOARD



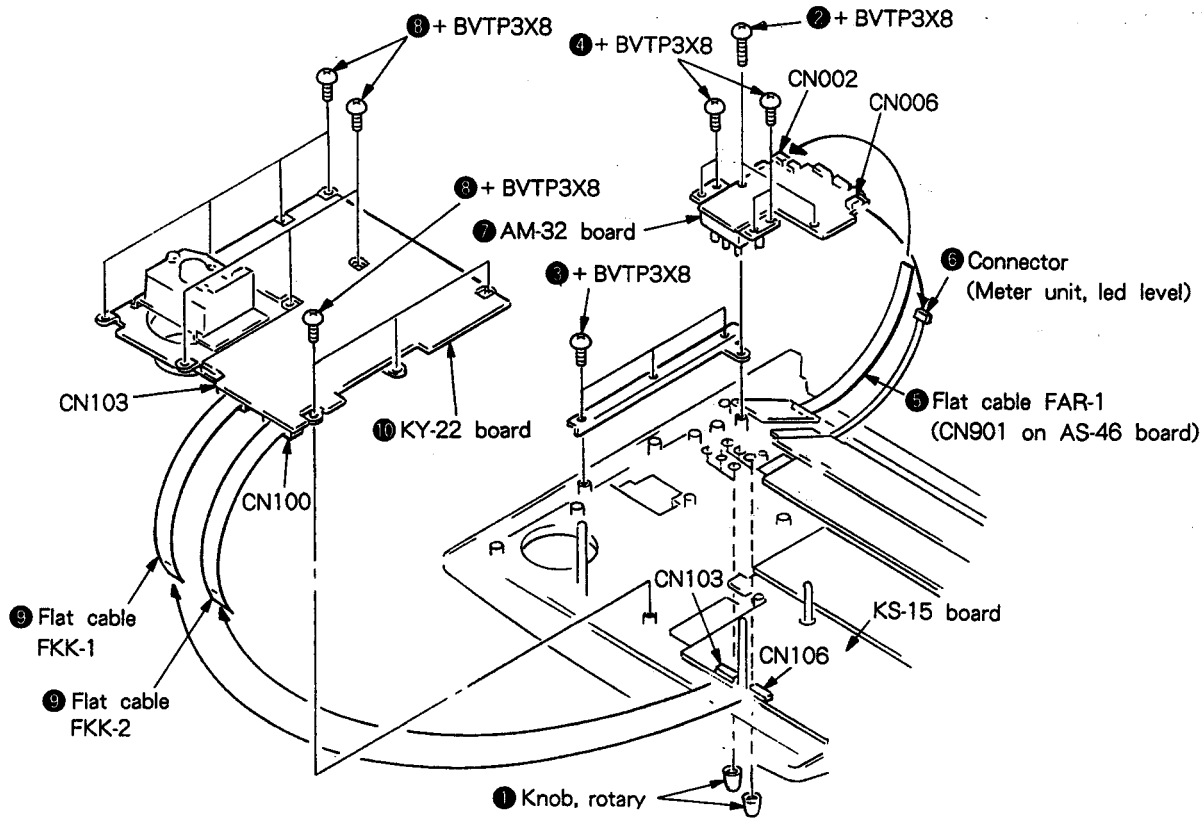
5. REMOVAL OF POWER BLOCK, FU-123 BOARD



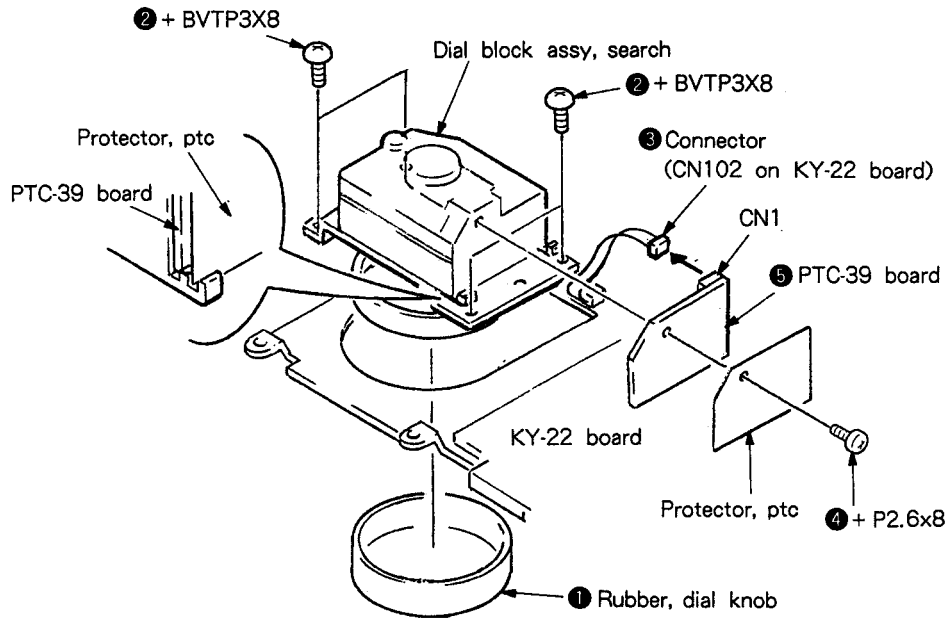
6. REMOVAL OF FADER ASSY



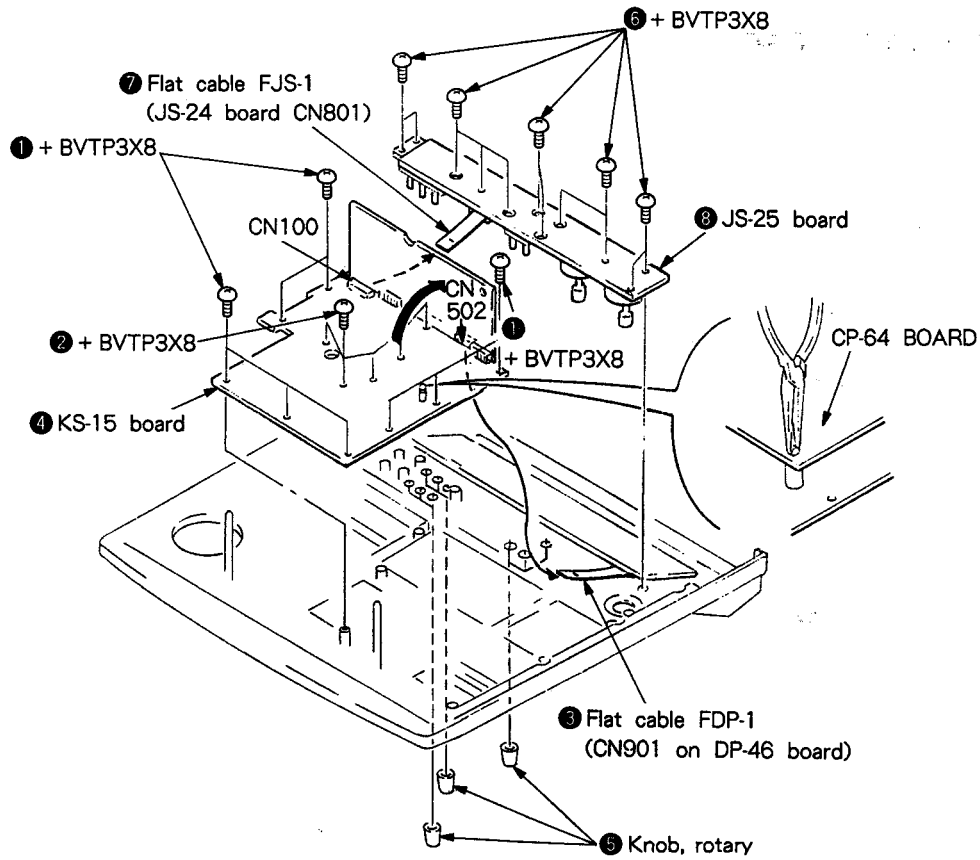
7. REMOVAL OF AM-32, KY-22 BOARD



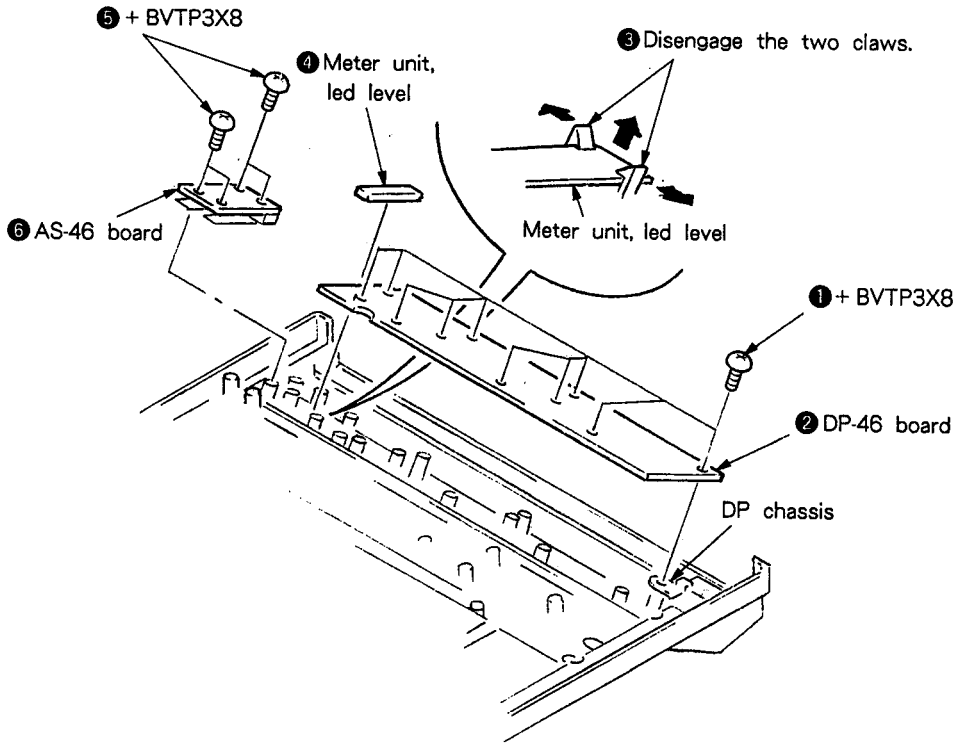
8. REMOVAL OF SEARCH DIAL BLOCK ASSY



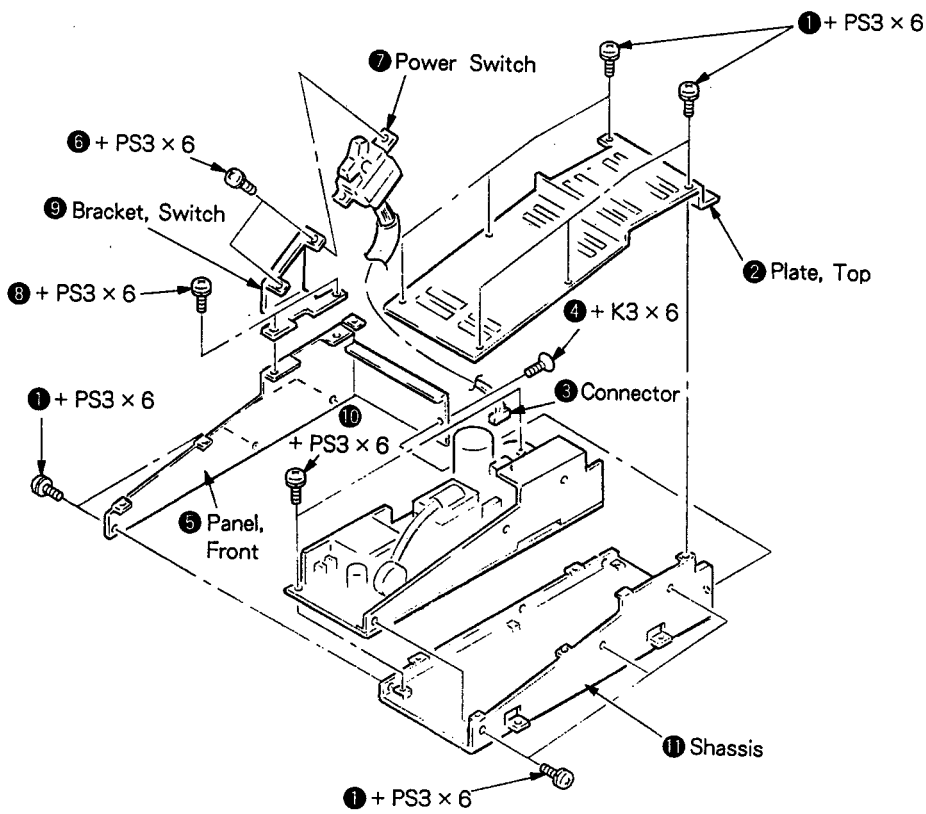
9. REMOVAL OF KS-15, CP-64, JS-25 BOARD



10. REMOVAL OF DP-46, AS-46 BOARD AND METER UNIT, LED LEVEL

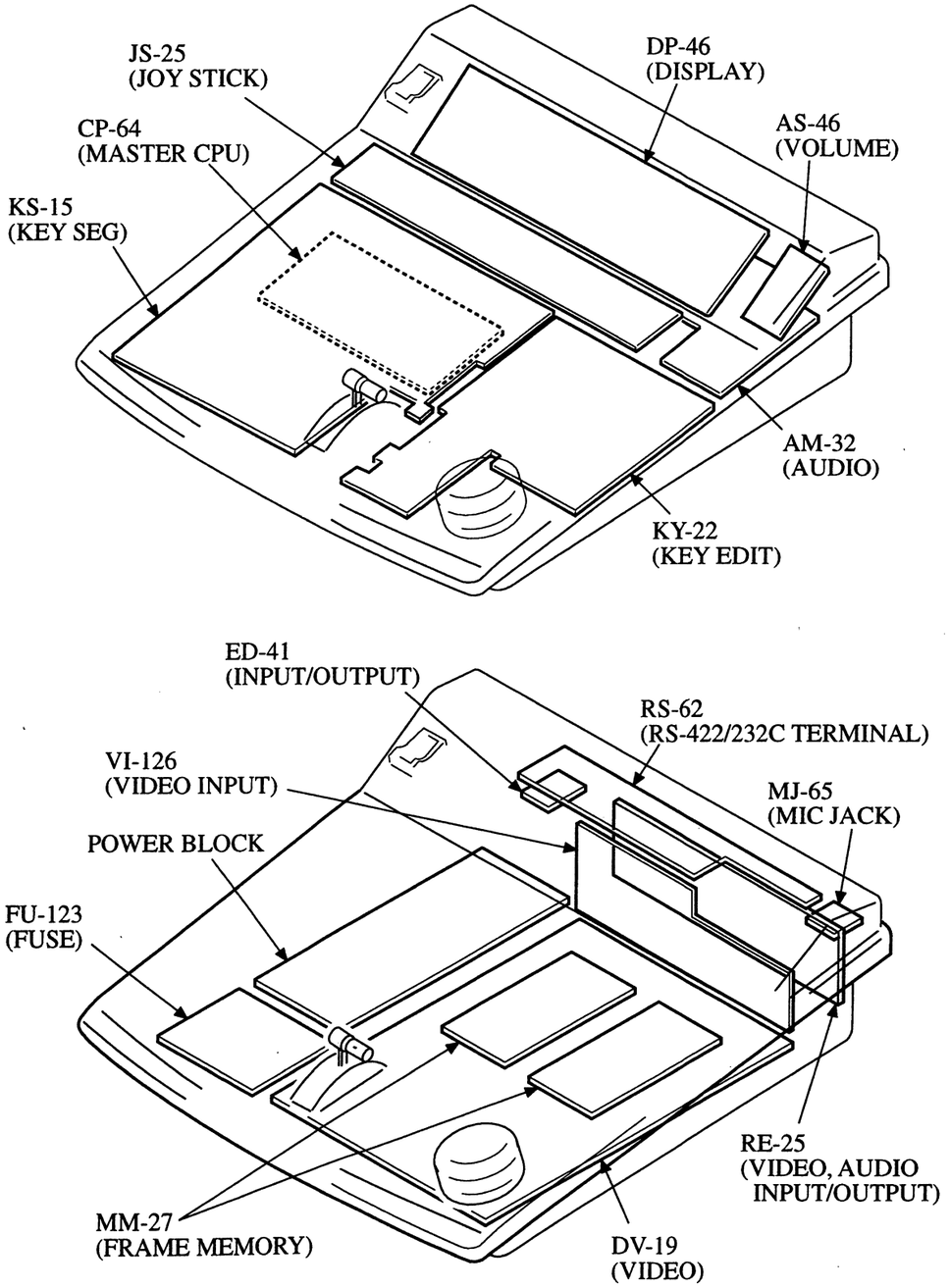


11. REMOVAL OF PARTS IN POWER SUPPLY BLOCK

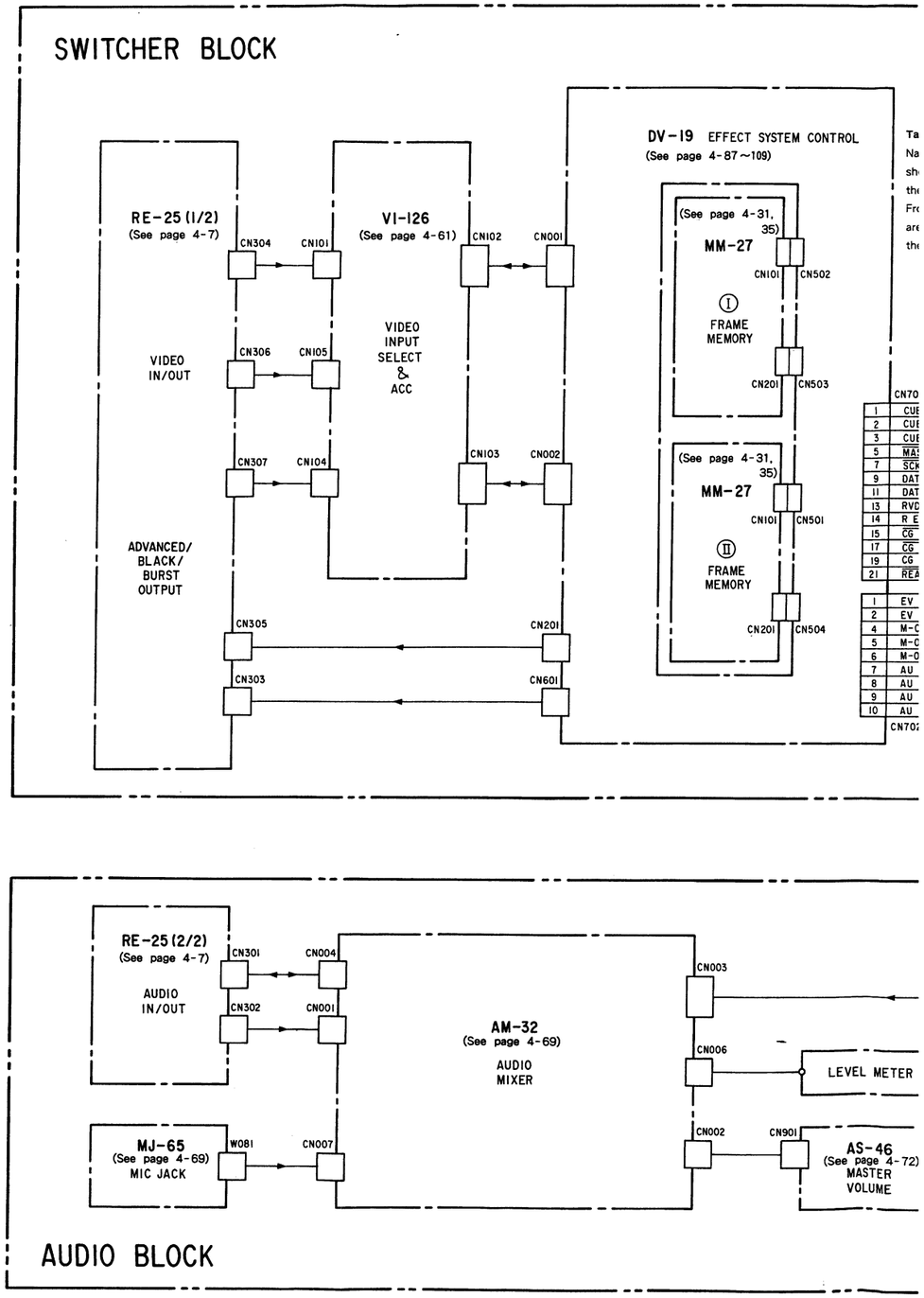


SECTION 3
DIAGRAMS

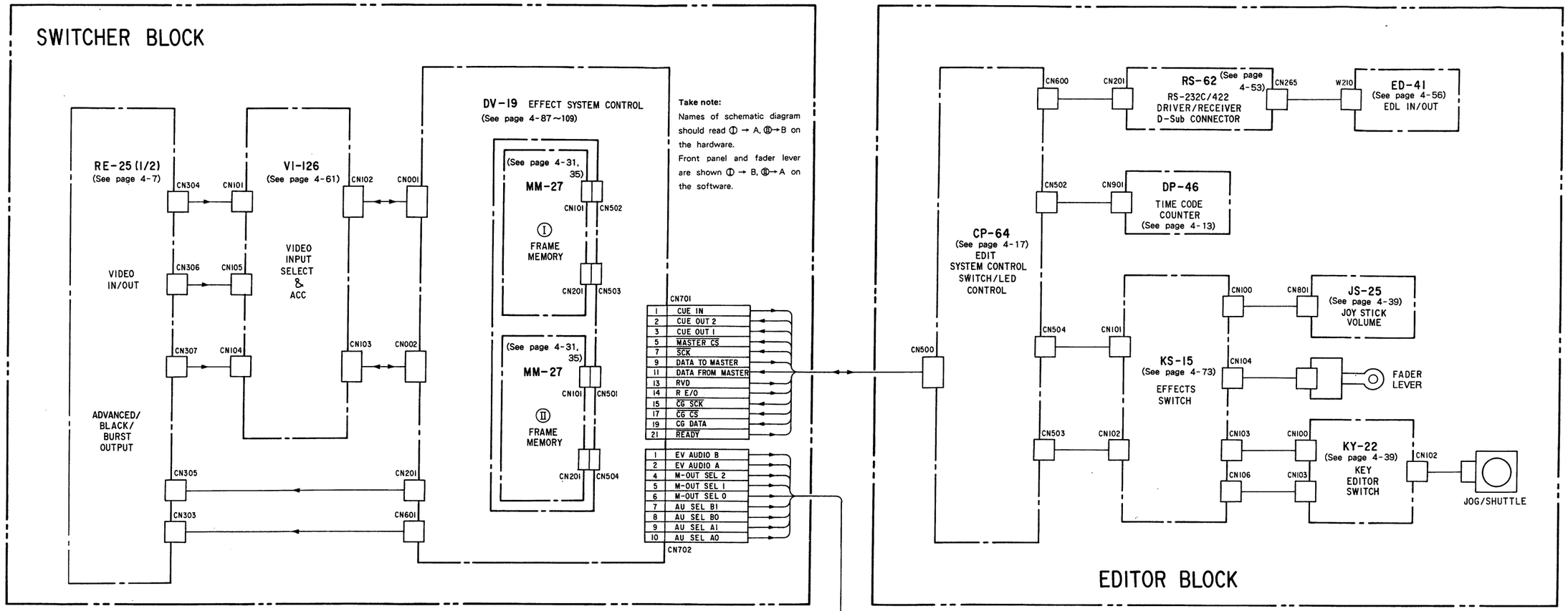
1. CIRCUIT BOARDS LOCATION

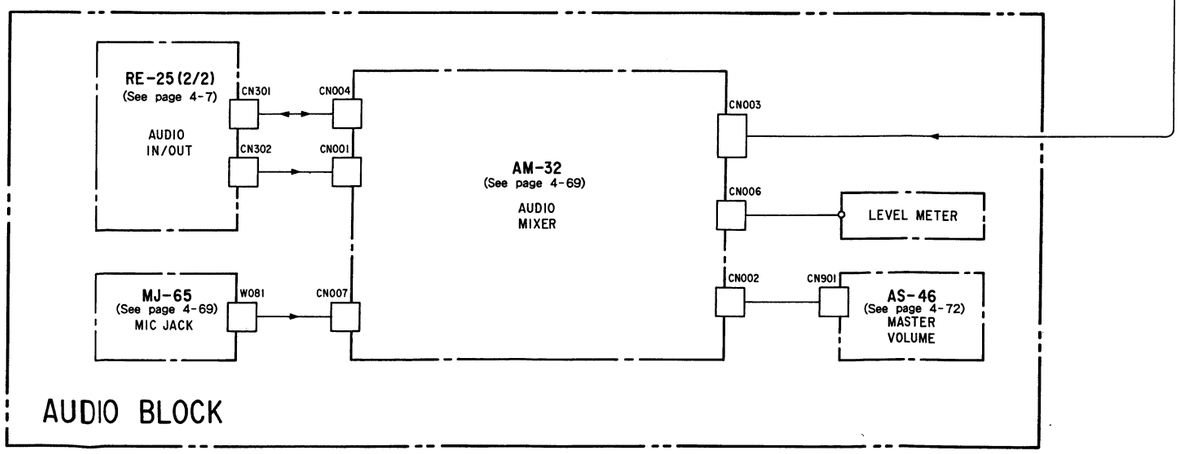


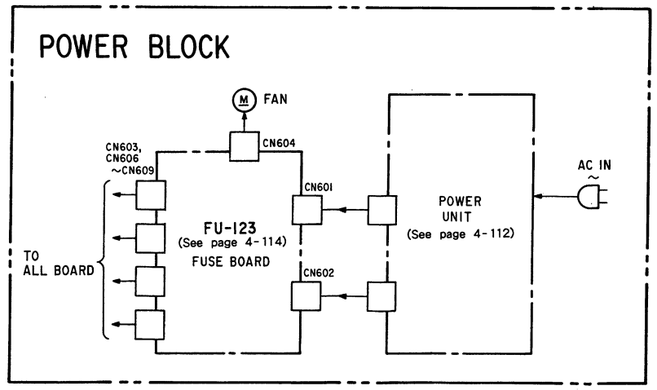
2. OVERALL BLOCK DIAGRAM

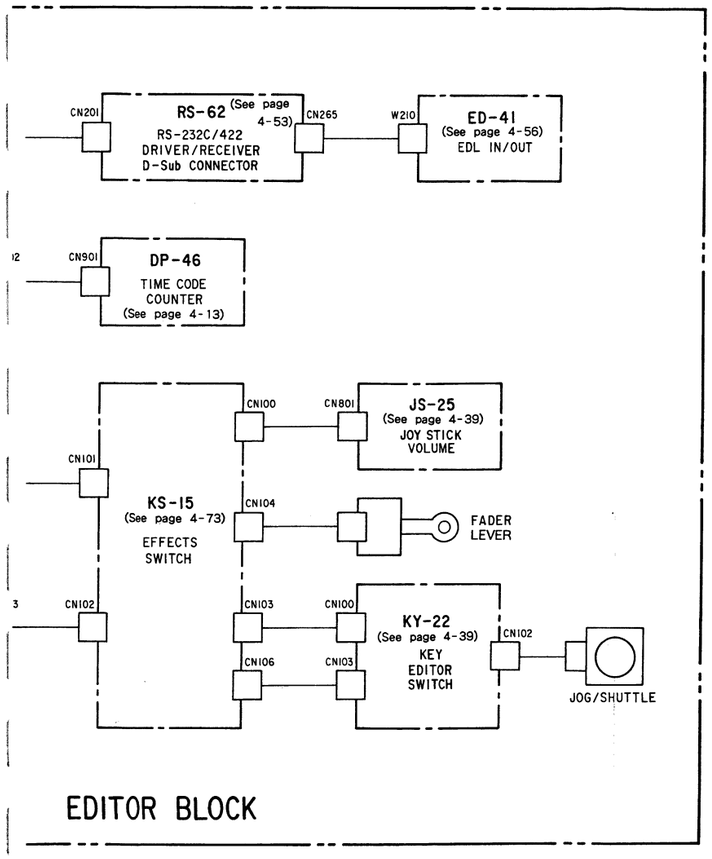


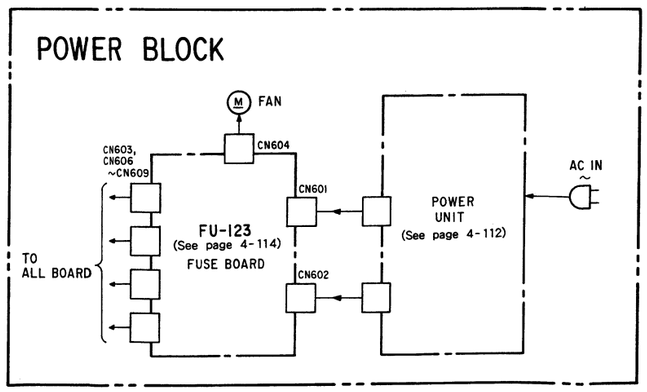
..DIAGRAM


SWITCHER BLOCK
RE-25 (1/2)
(See page 4-7)
CN304
CN101
VI-126
(See page 4-61)
CN102
CN001
VIDEO IN/OUT
CN306
CN105
VIDEO INPUT SELECT & ACC
CN307
CN104
CN103
CN002
ADVANCED/ BLACK/ BURST OUTPUT
CN305
CN201
CN303
CN601
DV-19 EFFECT SYSTEM CONTROL
(See page 4-87~109)
(See page 4-31, 35)
MM-27
CN101
CN502
Ⅰ
FRAME MEMORY
CN201
CN503
(See page 4-31, 35)
MM-27
CN101
CN501
Ⅱ
FRAME MEMORY
CN201
CN504
Take note:
Names of schematic diagram should read Ⅰ → A, Ⅱ→B on the hardware.
Front panel and fader lever are shown Ⅰ → B, Ⅱ→A on the software.
CN701
1 CUE IN
2 CUE OUT 2
3 CUE OUT 1
5 MASTER CS
7 SCK
9 DATA TO MASTER
11 DATA FROM MASTER
13 RVD
14 R E/O
15 CG SCK
17 CG CS
19 CG DATA
21 READY
1 EV AUDIO B
2 EV AUDIO A
4 M-OUT SEL 2
5 M-OUT SEL 1
6 M-OUT SEL 0
7 AU SEL BI
8 AU SEL BO
9 AU SEL AI
10 AU SEL AO
CN702
CN500
CP-64
(See page 4-17)
EDIT SYSTEM CONTROL SWITCH/LED CONTROL
CN600
CN201
RS-62 (See page 4-53)
RS-232C/422 DRIVER/RECEIVER D-Sub CONNECTOR
CN265
W210
ED-41
(See page 4-56)
EDL IN/OUT
CN502
CN901
DP-46
TIME CODE COUNTER
(See page 4-13)
CN504
CN101
KS-15
(See page 4-73)
EFFECTS SWITCH
CN100
CN801
JS-25
(See page 4-39)
JOY STICK VOLUME
CN104
FADER LEVER
CN503
CN102
CN103
CN100
KY-22
(See page 4-39)
KEY EDITOR SWITCH
CN102
CN106
CN103
JOG/SHUTTLE
EDITOR BLOCK


RE-25 (2/2)
(See page 4-7)
CN301
CN004
AUDIO IN/OUT
CN302
CN001
AM-32
(See page 4-69)
AUDIO MIXER
CN003
CN006
LEVEL METER
CN002
CN901
AS-46
(See page 4-72)
MASTER VOLUME
MJ-65
(See page 4-69)
MIC JACK
W081
CN007
AUDIO BLOCK


POWER BLOCK
M
FAN
CN604
CN603, CN606 ~CN609
CN601
AC IN
~
POWER UNIT
(See page 4-112)
TO ALL BOARD
FU-123
(See page 4-114)
FUSE BOARD
CN602





[DV-19 Board CN701, CN702 Description]

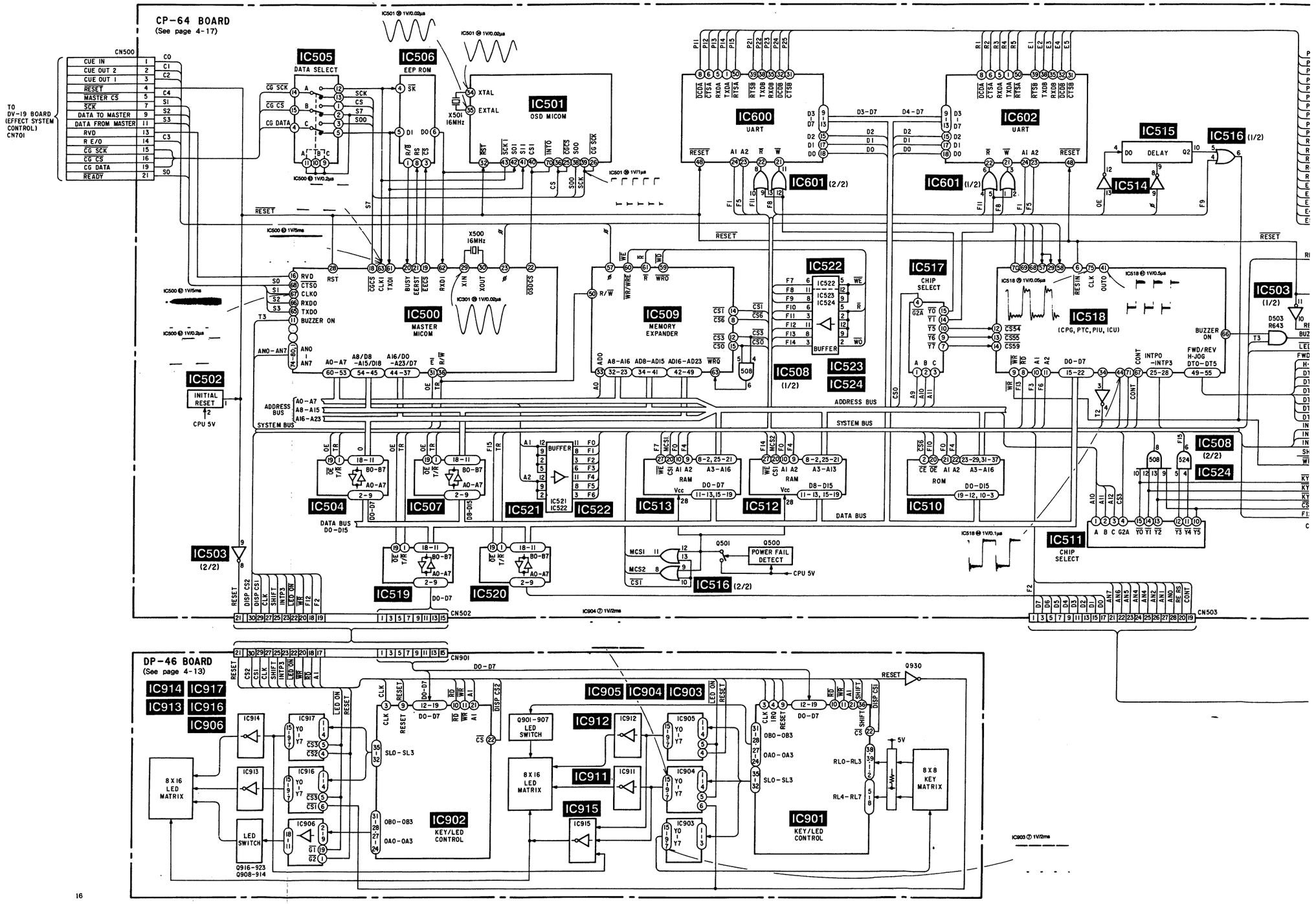
• CN701 Communication between CP-64 board and DV-19 board

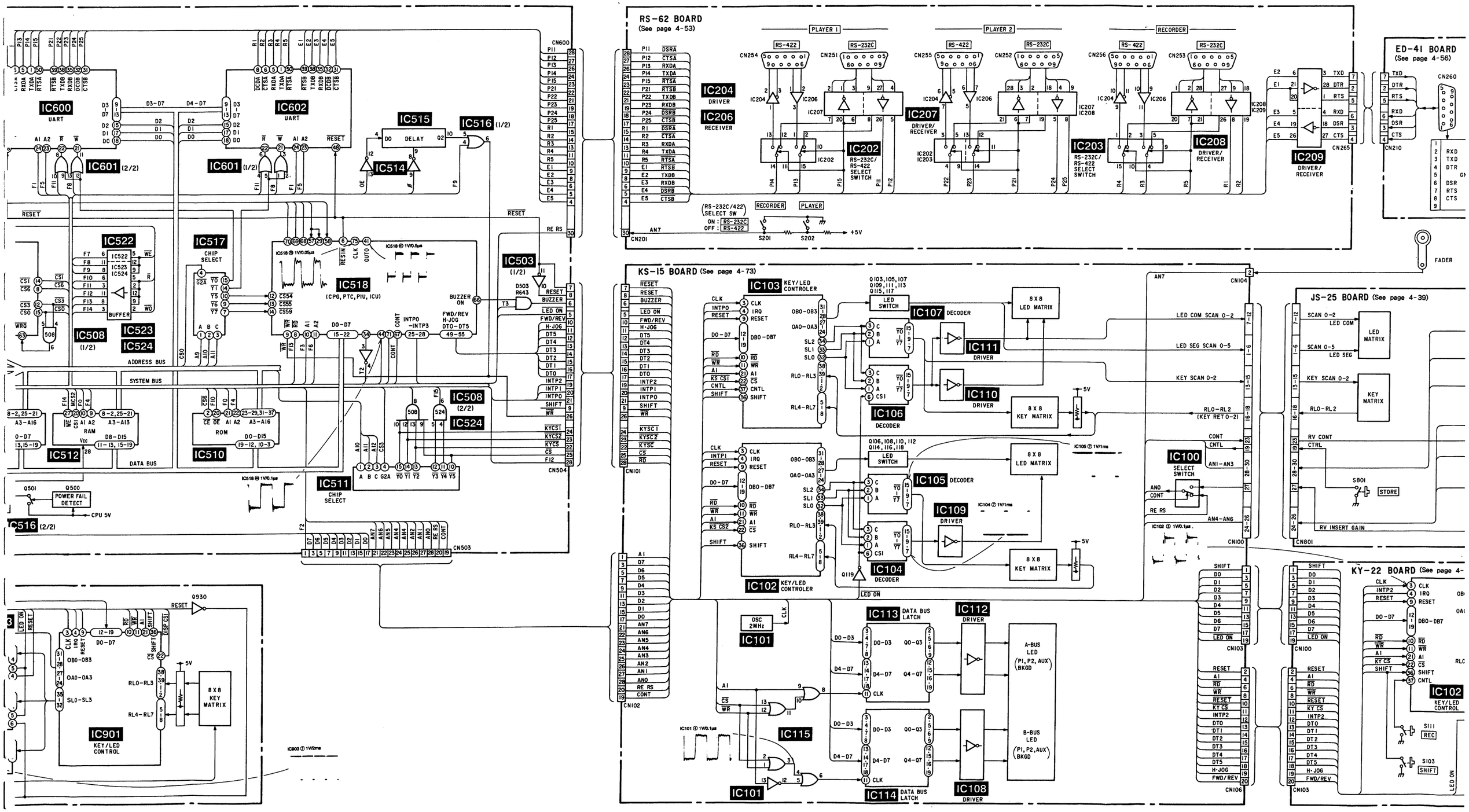
PIN	Name	Direction	Description
1	CUE IN	DV-19→CP-64	When an external pulse is input to the CUE IN connector, the same function as if the AUTO TRANS button is pressed is carried out. The pulse input is received by transistor circuit in DV-19 and sent to CP-64 board as it is.
2	CUE OUT2	CP-64→DV-19	The trigger pulse to external peripheral equipment. This pulse is output from CP-64 board, buffered by DV-19 and output to the CUE OUT terminal.
3	CUE OUT1	CP-64→DV-19	The trigger pulse to external peripheral equipment. This pulse is output from CP-64 board, buffered by DV-19 and output to the CUE OUT terminal.
5	$\overline{\text{MASTER CS}}$	CP-64→DV-19	The serial communication chip select signal from CP-64 master microprocessor (IC500) to the DV-19 main microprocessor (IC730).
7	$\overline{\text{SCK}}$	CP-64→DV-19	The serial communication clock from CP-64 master microprocessor (IC500) to the DV-19 main microprocessor (IC730).
9	DATA TO MASTER	DV-19→CP-64	The serial communication data from DV-19 main microprocessor (IC730) to the CP-64 master microprocessor (IC500).
11	DATA FROM-MASTER	CP-64→DV-19	The serial communication data from CP-64 master microprocessor (IC500) to the DV-19 main microprocessor (IC730).
13	RVD	DV-19→CP-64	VD signal of the video signal read system. The CP-64 master microprocessor determines the communication timing using this pulse rate.
14	R $\overline{\text{O}}$/E	DV-19→CP-64	Video signal read system L = Even, H = Odd pulse. The CP-64 master microprocessor comes to know whether the present timing is even or odd from this signal.
15	$\overline{\text{CG SCK}}$	CP-64→DV-19	The serial communication with the DV-19 character generator (IC206) IC. { $\overline{\text{SCK}}$: clock $\overline{\text{CS}}$: chip select DATA : data
17	$\overline{\text{CG CS}}$	CP-64→DV-19	
19	CG DATA	CP-64→DV-19	{ During the normal counter display mode : CP-64 OSD microprocessor (IC501) is output. During the menu mode : CP-64 master microprocessor (IC500) is output. }
21	$\overline{\text{READY}}$	DV-19→CP-64	DV-19 microprocessor (IC730) notifies to the CP-64 master microprocessor (IC500) whether the serial communication can be accepted or not.

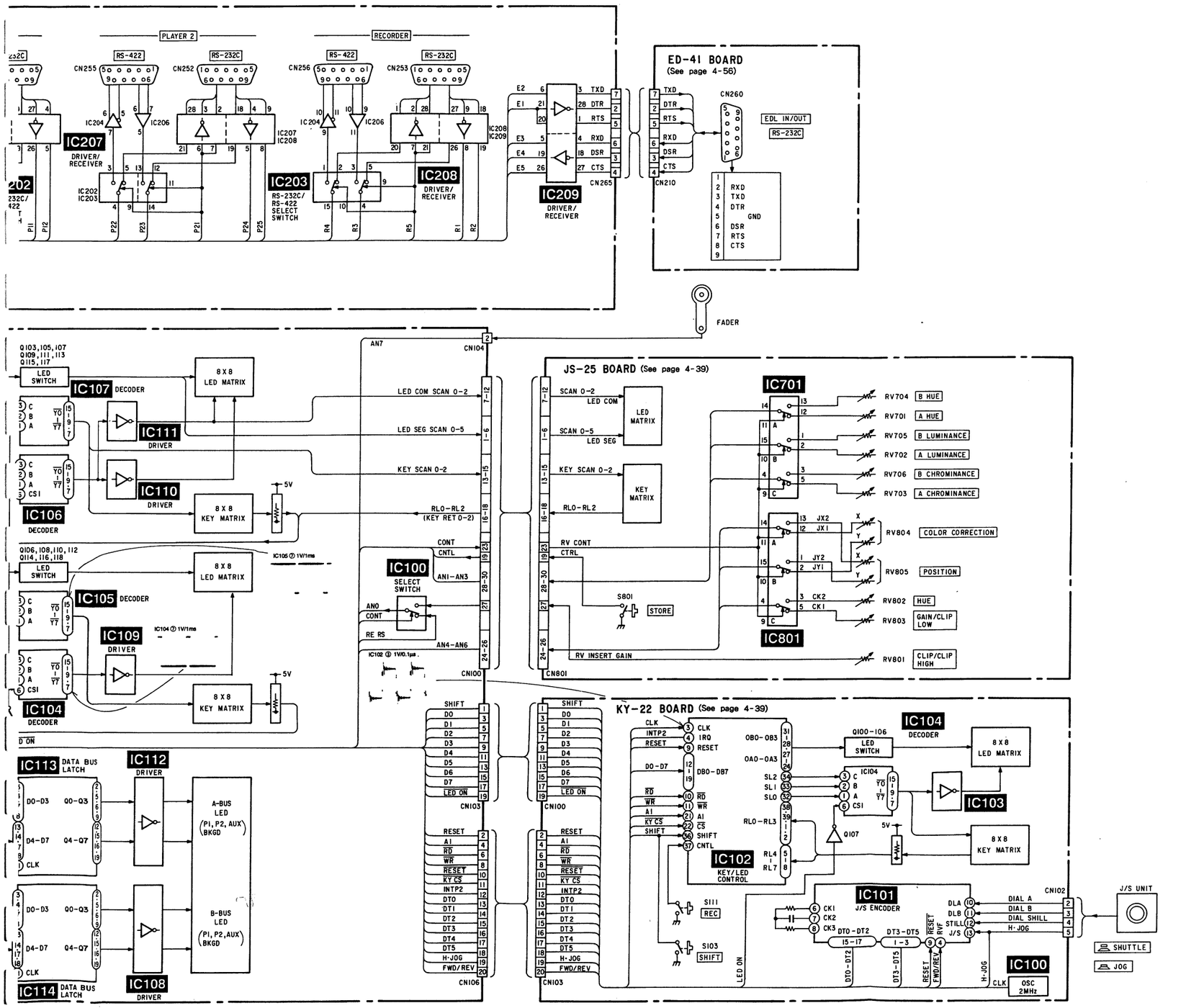
• CN702 Communication between AM-32 board and DV-19 board

PIN	Name	Direction	Description
1	EV AUDIO B	DV-19→AM-32	ATT level control of the B-Bus electronic volume control (AM-32, IC513). (DC voltage between 0 – 5V)
2	EV AUDIO A	DV-19→AM-32	ATT level control of the A-Bus electronic volume control (AM-32, IC512). (DC voltage between 0 – 5V)
4	M-OUT SEL 2	DV-19→AM-32	Audio monitor output audio select logic → IC616, IC518
5	M-OUT SEL 1	DV-19→AM-32	Logic is inverted in the AM-32 board, and level is converted from 0 – 5 to
6	M-OUT SEL 0	DV-19→AM-32	8 – 0 [V].
7	AU SEL B1	DV-19→AM-32	Audio B-Bus source audio select logic → IC511
8	AU SEL B0	DV-19→AM-32	Logic is inverted in the AM-32 board, and level is converted from 0 – 5 to 8 – 0 [V].
9	AU SEL A1	DV-19→AM-32	Audio A-Bus source audio select logic → IC510
10	AU SEL A0	DV-19→AM-32	Logic is inverted in the AM-32 board, and level is converted from 0 – 5 to 8 – 0 [V].

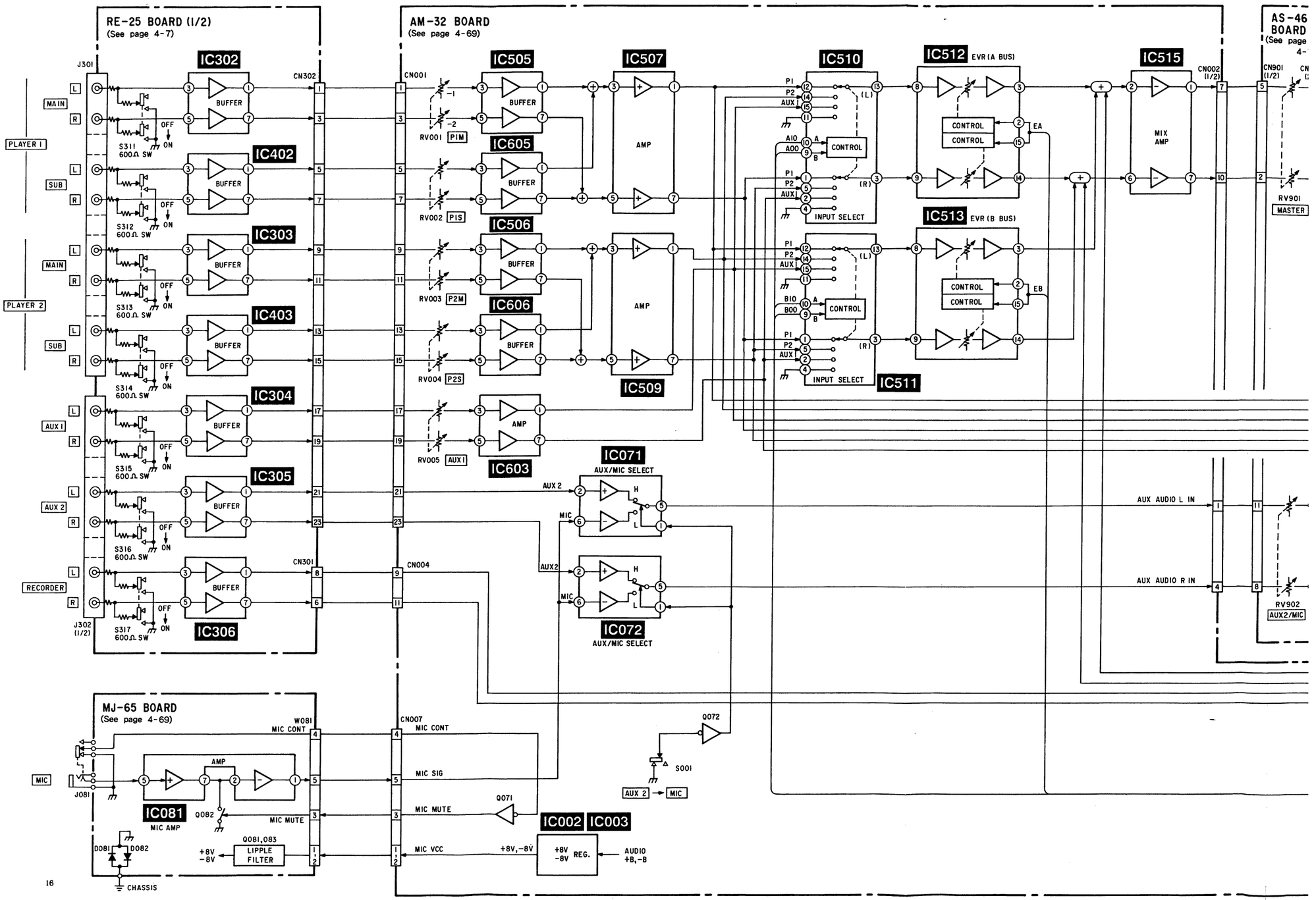
3. EDITOR BLOCK DIAGRAM




IC600 UART
IC601 (2/2)
IC601 (1/2)
IC602 UART
IC515
IC516 (1/2)
IC514
IC516 (2/2)
IC522
IC523
IC524
IC508 (1/2)
IC517 CHIP SELECT
IC518 (CPG, PTC, PIU, ICU)
IC503 (1/2)
IC508 (2/2)
IC524
IC510
IC511 CHIP SELECT
IC512
IC901 KEY/LED CONTROL
RESET
ADDRESS BUS
SYSTEM BUS
DATA BUS
BUFFER
RAM
ROM
POWER FAIL DETECT
CPU 5V
CN600
CN503
CN504
RS-62 BOARD (See page 4-53)
PLAYER 1
PLAYER 2
RECORDER
RS-422
RS-232C
IC204 DRIVER
IC206 RECEIVER
IC207 DRIVER/ RECEIVER
IC202 RS-232C/ RS-422 SELECT SWITCH
IC203 RS-232C/ RS-422 SELECT SWITCH
IC208 DRIVER/ RECEIVER
IC209 DRIVER/ RECEIVER
(RS-232C/422) SELECT SW
ON : RS-232C
OFF : RS-422
RECORDER
PLAYER
S201
S202
+5V
CN201
ED-41 BOARD (See page 4-56)
CN260
CN210
CN265
FADER
KS-15 BOARD (See page 4-73)
IC103 KEY/LED CONTROLER
IC107 DECODER
IC111 DRIVER
IC110 DRIVER
IC106 DECODER
IC105 DECODER
IC109 DRIVER
IC104 DECODER
IC102 KEY/LED CONTROLER
IC101
IC115
IC113 DATA BUS LATCH
IC114 DATA BUS LATCH
IC112 DRIVER
IC108 DRIVER
8 X 8 LED MATRIX
8 X 8 KEY MATRIX
LED SWITCH
A-BUS LED (P1, P2, AUX BKGD)
B-BUS LED (P1, P2, AUX BKGD)
LED COM SCAN 0-2
LED SEG SCAN 0-5
KEY SCAN 0-2
RLO-RL2 (KEY RET 0-2)
IC100 SELECT SWITCH
JS-25 BOARD (See page 4-39)
SCAN 0-2
LED COM
SCAN 0-5
LED SEG
KEY SCAN 0-2
KEY MATRIX
RLO-RL2
RV CONT
CTRL
S801
STORE
RV INSERT GAIN
KY-22 BOARD (See page 4-
CN801
CN100
CN101
CN102
CN103
CN104
CN106

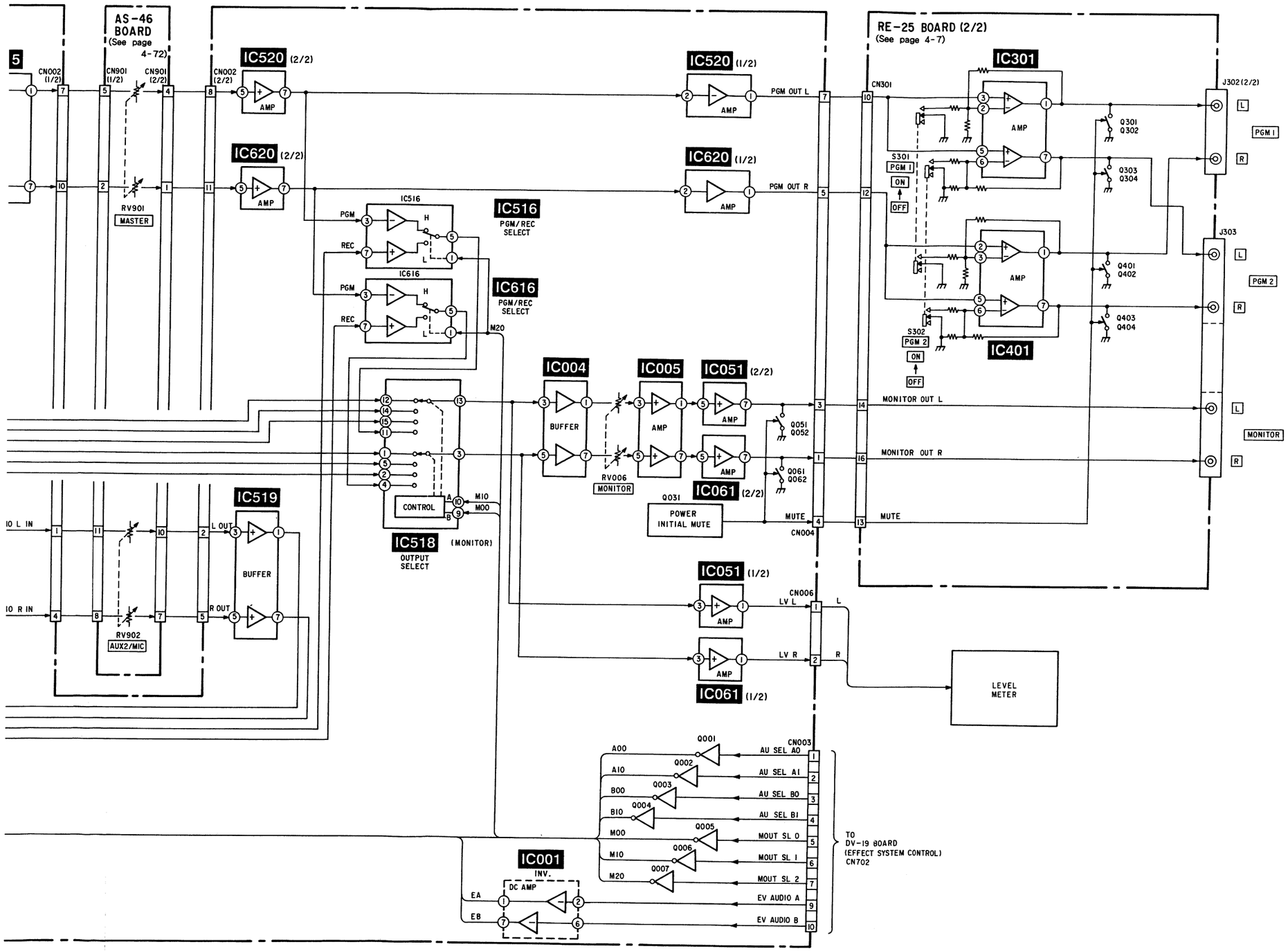

PLAYER 2
RECORDER
RS-422
RS-232C
CN255
CN252
CN256
CN253
IC207
DRIVER/
RECEIVER
IC204
IC206
IC207
IC208
IC202
IC203
RS-232C/
RS-422
SELECT
SWITCH
IC208
DRIVER/
RECEIVER
IC209
DRIVER/
RECEIVER
CN265
CN210
ED-41 BOARD
(See page 4-56)
CN260
EDL IN/OUT
RS-232C
TXD
DTR
RTS
RXD
DSR
CTS
RXD
TXD
GND
DSR
RTS
CTS
FADER
Q103,105,107
Q109,111,113
Q115,117
LED
SWITCH
IC107
DECODER
8 X 8
LED MATRIX
IC111
DRIVER
IC110
DRIVER
IC106
DECODER
8 X 8
KEY MATRIX
5V
Q106,108,110,112
Q114,116,118
IC105
DECODER
IC109
DRIVER
IC104
DECODER
D ON
AN7
CN104
LED COM SCAN 0-2
LED SEG SCAN 0-5
KEY SCAN 0-2
RL0-RL2
(KEY RET 0-2)
CONT
CNTL
ANI-AN3
IC100
SELECT
SWITCH
AN0
CONT
RE RS
AN4-AN6
CN100
SHIFT
DO
D1
D2
D3
D4
D5
D6
D7
LED ON
CN103
RESET
AI
RD
WR
RESET
KY CS
INTP2
DTO
DT1
DT2
DT3
DT4
DT5
H·JOG
FWD/REV
CN106
JS-25 BOARD (See page 4-39)
SCAN 0-2
LED COM
SCAN 0-5
LED SEG
KEY SCAN 0-2
RL0-RL2
RV CONT
CTRL
RV INSERT GAIN
S801
STORE
CN801
IC701
RV704 B HUE
RV701 A HUE
RV705 B LUMINANCE
RV702 A LUMINANCE
RV706 B CHROMINANCE
RV703 A CHROMINANCE
RV804 COLOR CORRECTION
RV805 POSITION
RV802 HUE
RV803 GAIN/CLIP LOW
RV801 CLIP/CLIP HIGH
IC801
IC113
DATA BUS
LATCH
IC112
DRIVER
A-BUS
LED
(P1, P2, AUX
BKGD)
B-BUS
LED
(P1, P2, AUX
BKGD)
IC108
DRIVER
IC114
DATA BUS
LATCH
KY-22 BOARD (See page 4-39)
CLK
INTP2
RESET
DO-D7
RD
WR
AI
KY CS
SHIFT
IRQ
DB0-DB7
OB0-OB3
OA0-OA3
SL2
SL1
SL0
RL0-RL3
RL4
RL7
CNT1
IC102
KEY/LED
CONTROL
Q100-106
LED
SWITCH
IC104
DECODER
IC103
8 X 8
LED MATRIX
8 X 8
KEY MATRIX
Q107
5V
S111
REC
S103
SHIFT
IC101
J/S ENCODER
CK1
CK2
CK3
DT0-DT2
DT3-DT5
RESET
FWD/REV
J/S
CN102
DLA
DLB
STILL
DIAL A
DIAL B
DIAL SHILL
H·JOG
J/S UNIT
SHUTTLE
JOG
IC100
OSC
2MHz

4. AUDIO BLOCK DIAGRAM

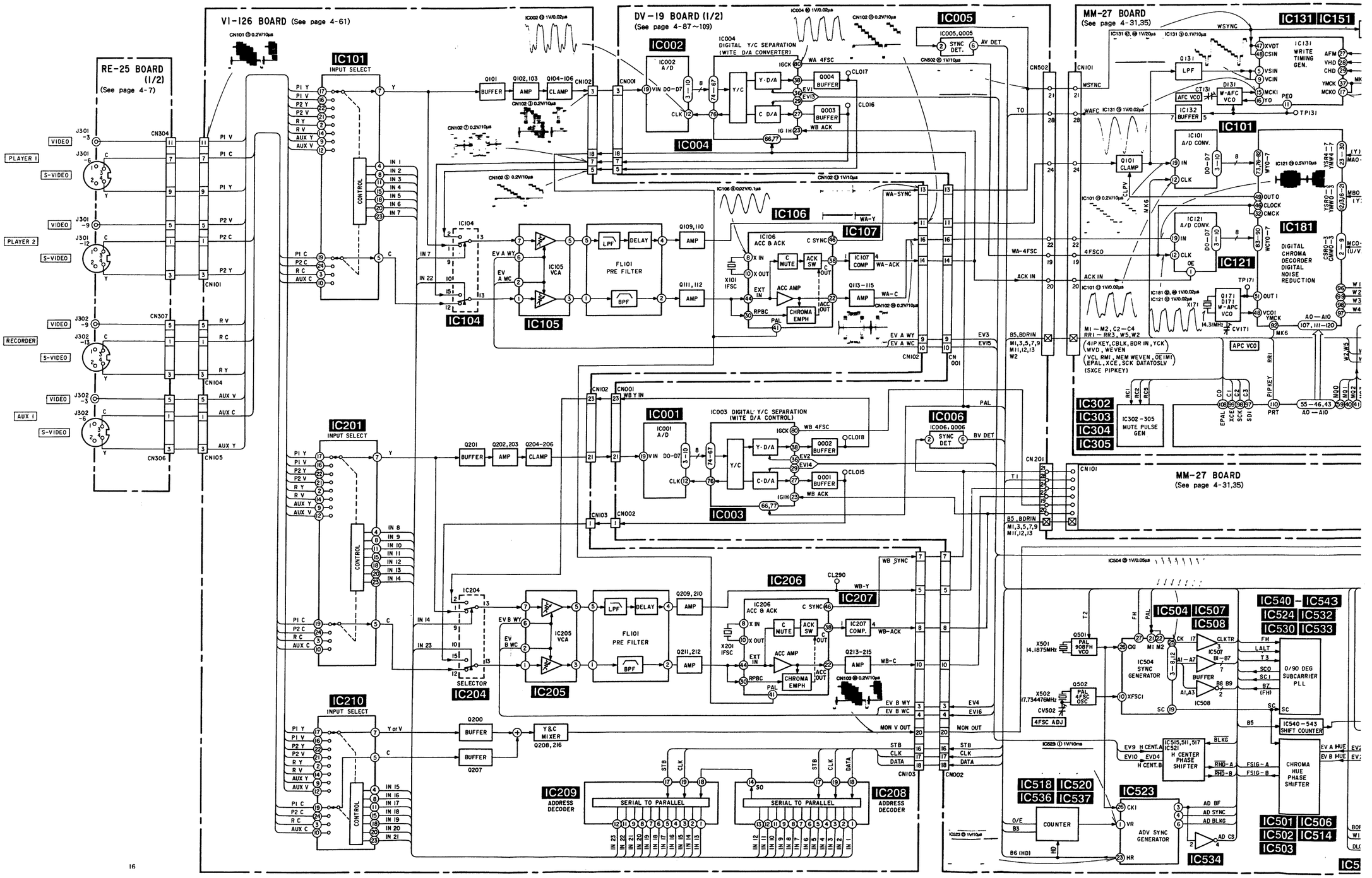


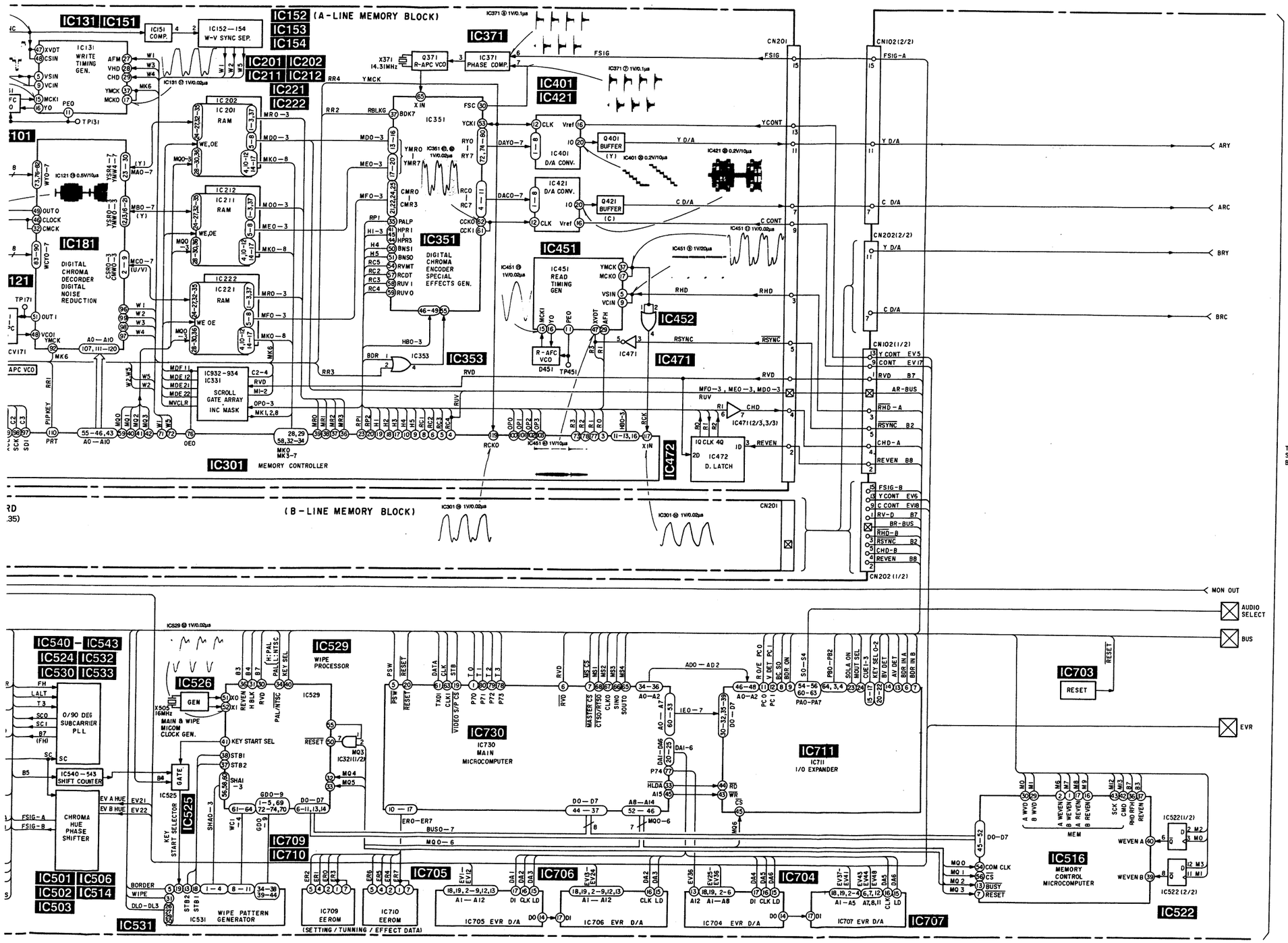
3-11

3-12

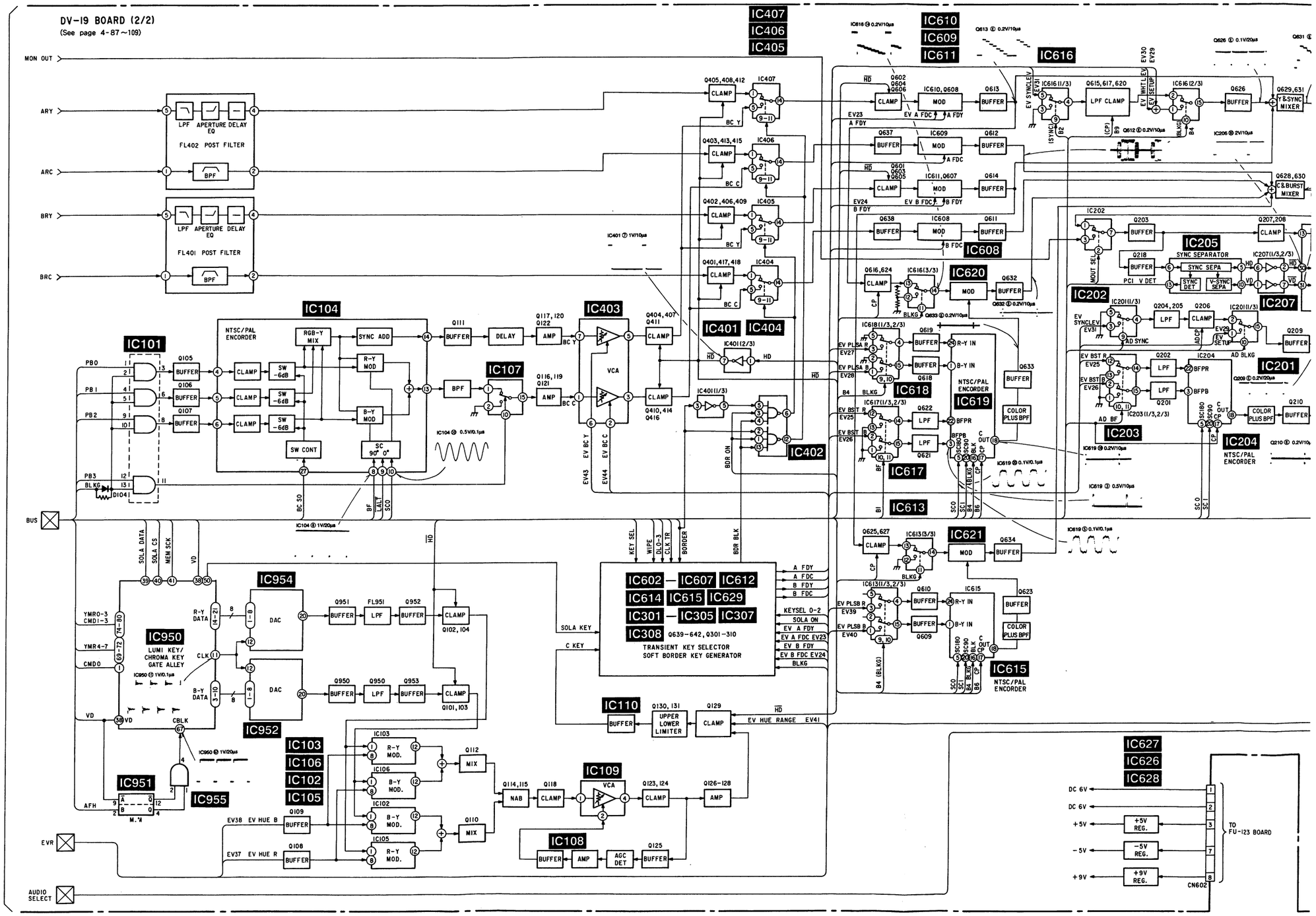

AS-46 BOARD
(See page 4-72)
CN002 (1/2)
CN901 (1/2)
CN901 (2/2)
CN002 (2/2)
IC520 (2/2)
IC520 (1/2)
PGM OUT L
IC620 (2/2)
IC620 (1/2)
PGM OUT R
RV901
MASTER
IC516
PGM/REC SELECT
IC616
PGM/REC SELECT
PGM
REC
H
L
M20
IC004
IC005
IC051 (2/2)
BUFFER
AMP
Q051
Q052
Q061
Q062
RV006
MONITOR
IC061 (2/2)
Q031
POWER INITIAL MUTE
MUTE
CN004
CONTROL
M10
M00
IC518
OUTPUT SELECT
(MONITOR)
IC519
IO L IN
IO R IN
L OUT
R OUT
RV902
AUX2/MIC
IC051 (1/2)
CN006
LV L
LV R
L
R
LEVEL METER
IC001
INV.
DC AMP
EA
EB
Q001
Q002
Q003
Q004
Q005
Q006
Q007
A00
A10
B00
B10
M00
M10
M20
CN003
AU SEL A0
AU SEL A1
AU SEL B0
AU SEL B1
MOUT SL 0
MOUT SL 1
MOUT SL 2
EV AUDIO A
EV AUDIO B
TO DV-19 BOARD (EFFECT SYSTEM CONTROL) CN702
RE-25 BOARD (2/2)
(See page 4-7)
IC301
CN301
S301
PGM 1
ON
OFF
Q301
Q302
Q303
Q304
J302 (2/2)
L
R
PGM 1
J303
Q401
Q402
Q403
Q404
S302
PGM 2
IC401
PGM 2
MONITOR OUT L
MONITOR OUT R
MUTE
MONITOR

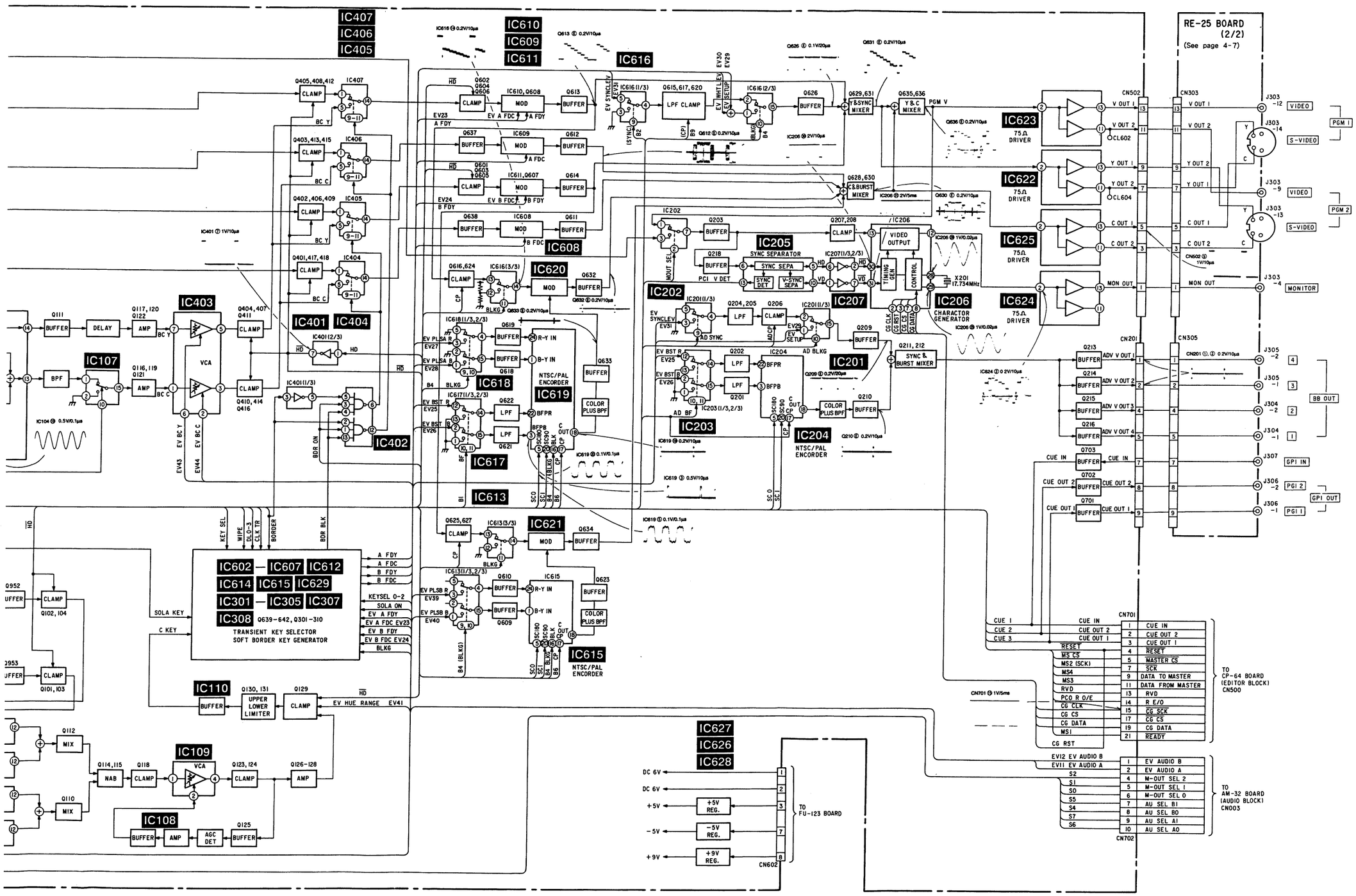
5. SWITCHER (1) BLOCK DIAGRAM




IC131 IC151
IC131 WRITE TIMING GEN.
IC151 COMP.
IC152—154 W-V SYNC SEP.
IC152 IC153 IC154 (A-LINE MEMORY BLOCK)
IC201 IC202 IC211 IC212 IC221 IC222
IC202 IC201 RAM
IC212 IC211 RAM
IC222 IC221 RAM
IC181 DIGITAL CHROMA DECORDER DIGITAL NOISE REDUCTION
IC301 MEMORY CONTROLLER
IC932—934 IC331 SCROLL GATE ARRAY INC MASK
IC371 PHASE COMP.
Q371 R-APC VCO
X371 14.31MHz
IC351 DIGITAL CHROMA ENCODER SPECIAL EFFECTS GEN.
IC401 IC421
IC401 D/A CONV.
IC421 D/A CONV.
Q401 BUFFER
Q421 BUFFER
IC451 READ TIMING GEN
IC452
IC471
IC472 D. LATCH
IC353
R-AFC VCO
D451
TP451
IC471(2/3,3/3)
(B-LINE MEMORY BLOCK)
CN201
CN102(2/2)
CN202(2/2)
CN102(1/2)
FSIG
YCONT
C CONT
Y D/A
C D/A
ARY
ARC
BRY
BRC
RHD
RSYNC
RVD
RUV
CHD
REVEN
AR-BUS
BR-BUS
TO SWITCHER BLOCK (2/2)
IC540 - IC543 IC524 IC532 IC530 IC533
IC526 GEN
X505 16MHz MAIN & WIPE MICOM CLOCK GEN.
O/90 DEG SUBCARRIER PLL
IC540—543 SHIFT COUNTER
IC525 KEY START SELECTOR
IC529 WIPE PROCESSOR
IC730 IC730 MAIN MICROCOMPUTER
IC711 IC711 I/O EXPANDER
IC703 RESET
IC501 IC506 IC502 IC514 IC503
CHROMA HUE PHASE SHIFTER
IC531 WIPE PATTERN GENERATOR
IC709 IC710 EEROM (SETTING / TUNNING / EFFECT DATA)
IC705 EVR D/A
IC706 EVR D/A
IC704 EVR D/A
IC707 EVR D/A
IC516 MEMORY CONTROL MICROCOMPUTER
IC522 IC522(1/2) IC522(2/2)
MON OUT
AUDIO SELECT
BUS
EVR

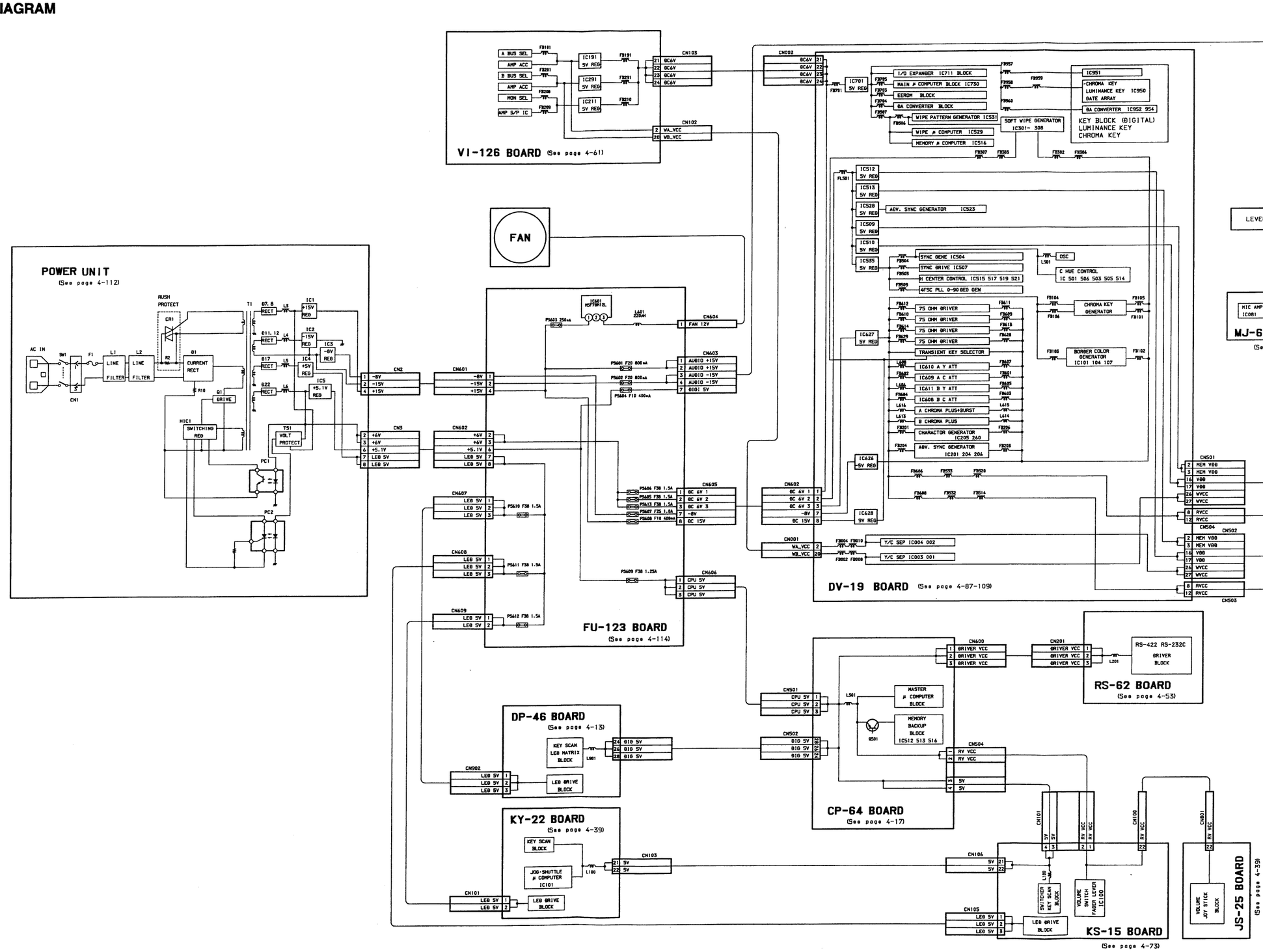
6. SWITCHER (2) BLOCK DIAGRAM

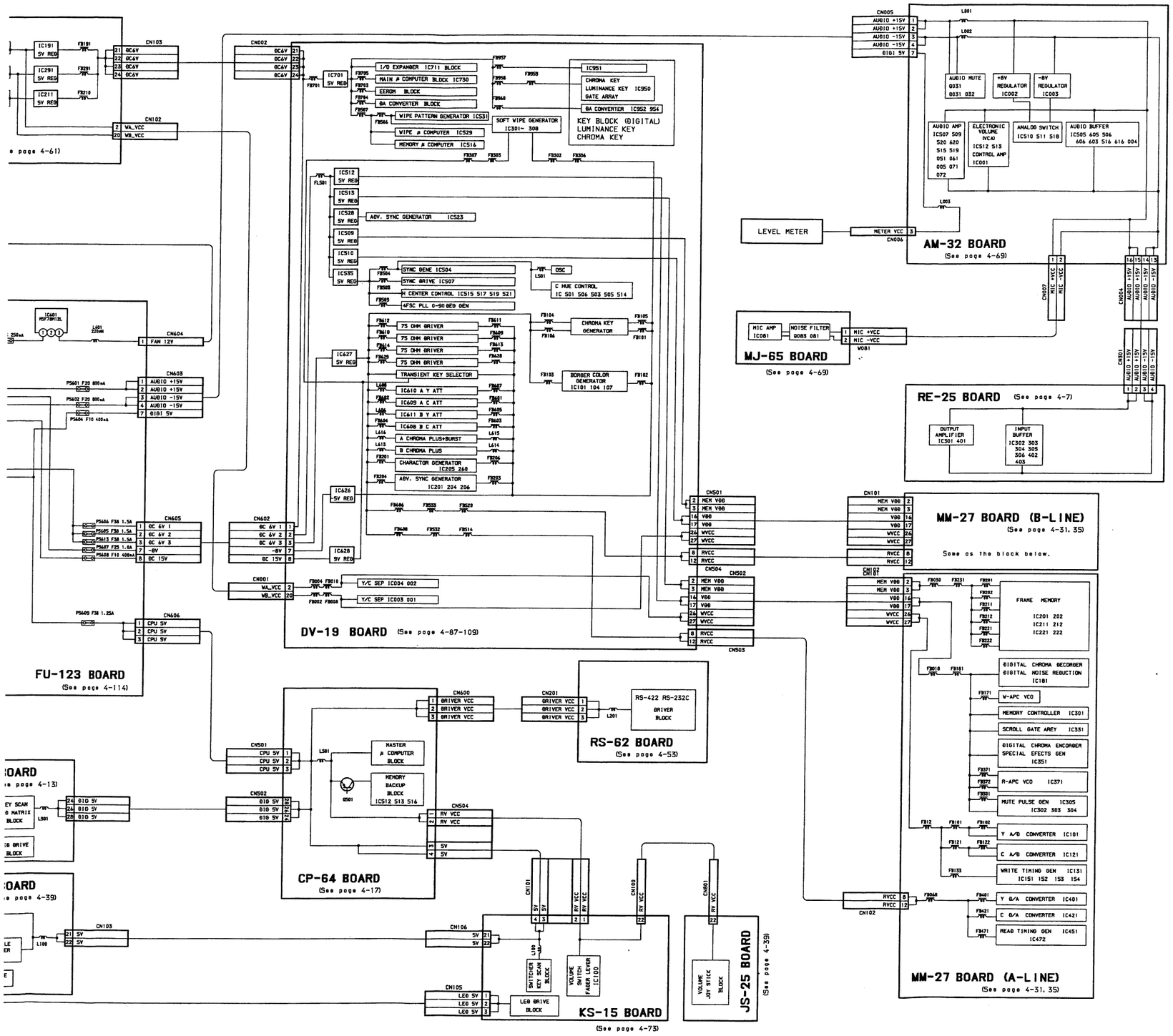



RE-25 BOARD (2/2)
(See page 4-7)
IC407
IC406
IC405
IC610
IC609
IC611
IC616
IC623
IC622
IC625
IC624
IC403
IC401
IC404
IC107
IC608
IC620
IC205
IC202
IC207
IC206
IC618
IC619
IC201
IC203
IC204
IC402
IC617
IC613
IC621
IC602 — IC607 IC612
IC614 IC615 IC629
IC301 — IC305 IC307
IC308 Q639-642, Q301-310
TRANSIENT KEY SELECTOR
SOFT BORDER KEY GENERATOR
IC615
IC110
IC109
IC108
IC627
IC626
IC628
TO CP-64 BOARD (EDITOR BLOCK) CN500
TO AM-32 BOARD (AUDIO BLOCK) CN003
TO FU-123 BOARD
VIDEO
S-VIDEO
MONITOR
BB OUT
GPI IN
GPI OUT
PGM 1
PGM 2

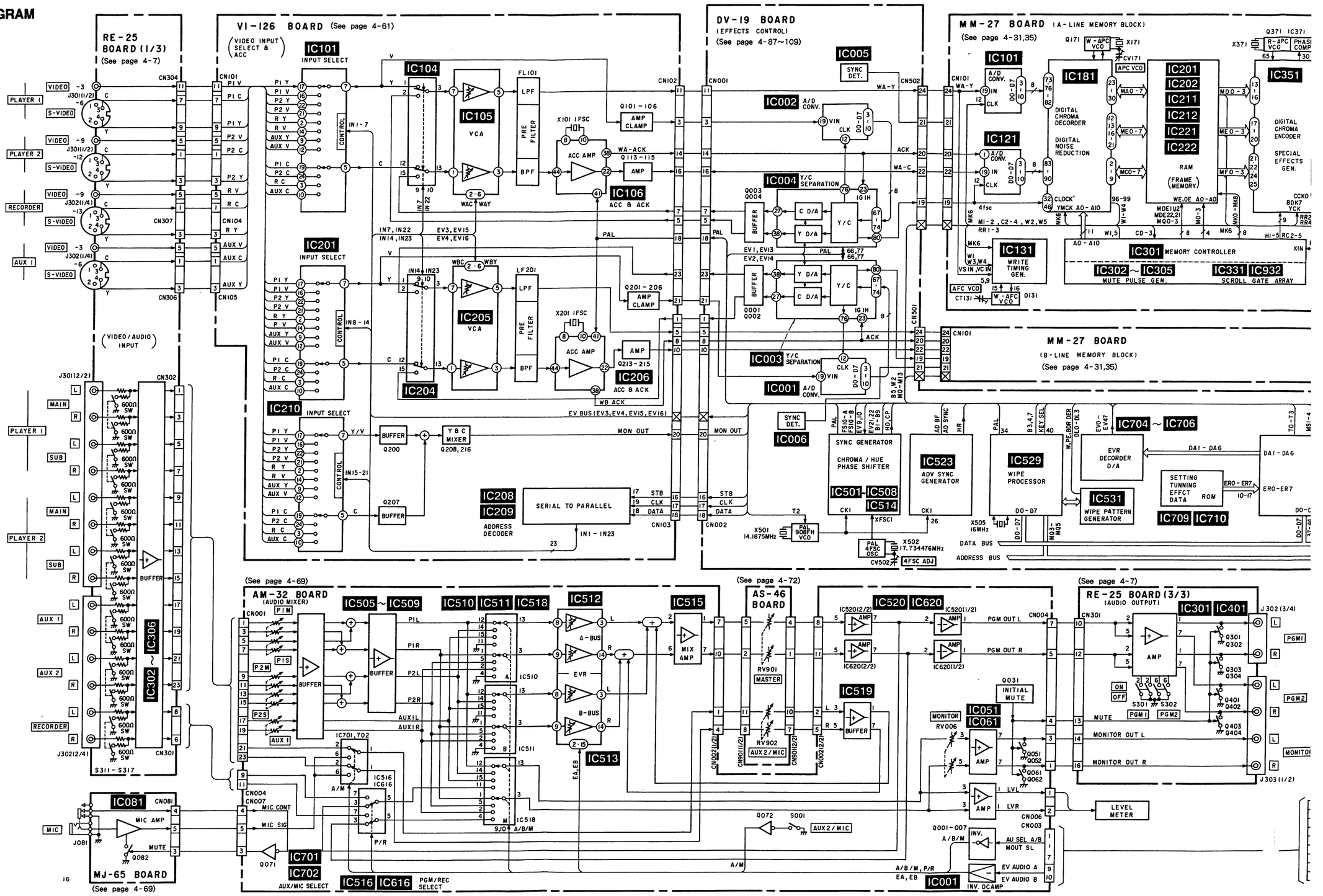
FXE-100P

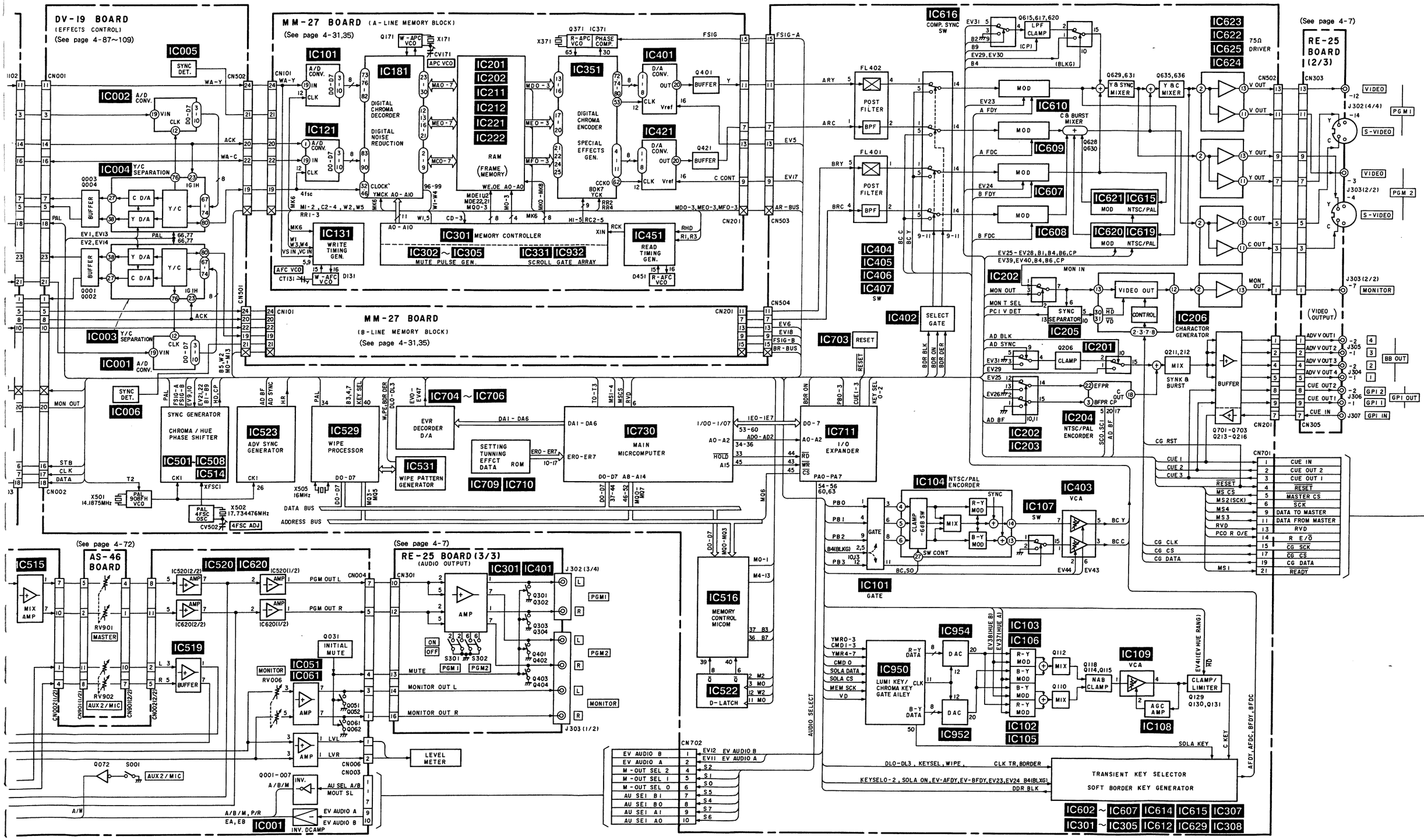
7. POWER BLOCK DIAGRAM

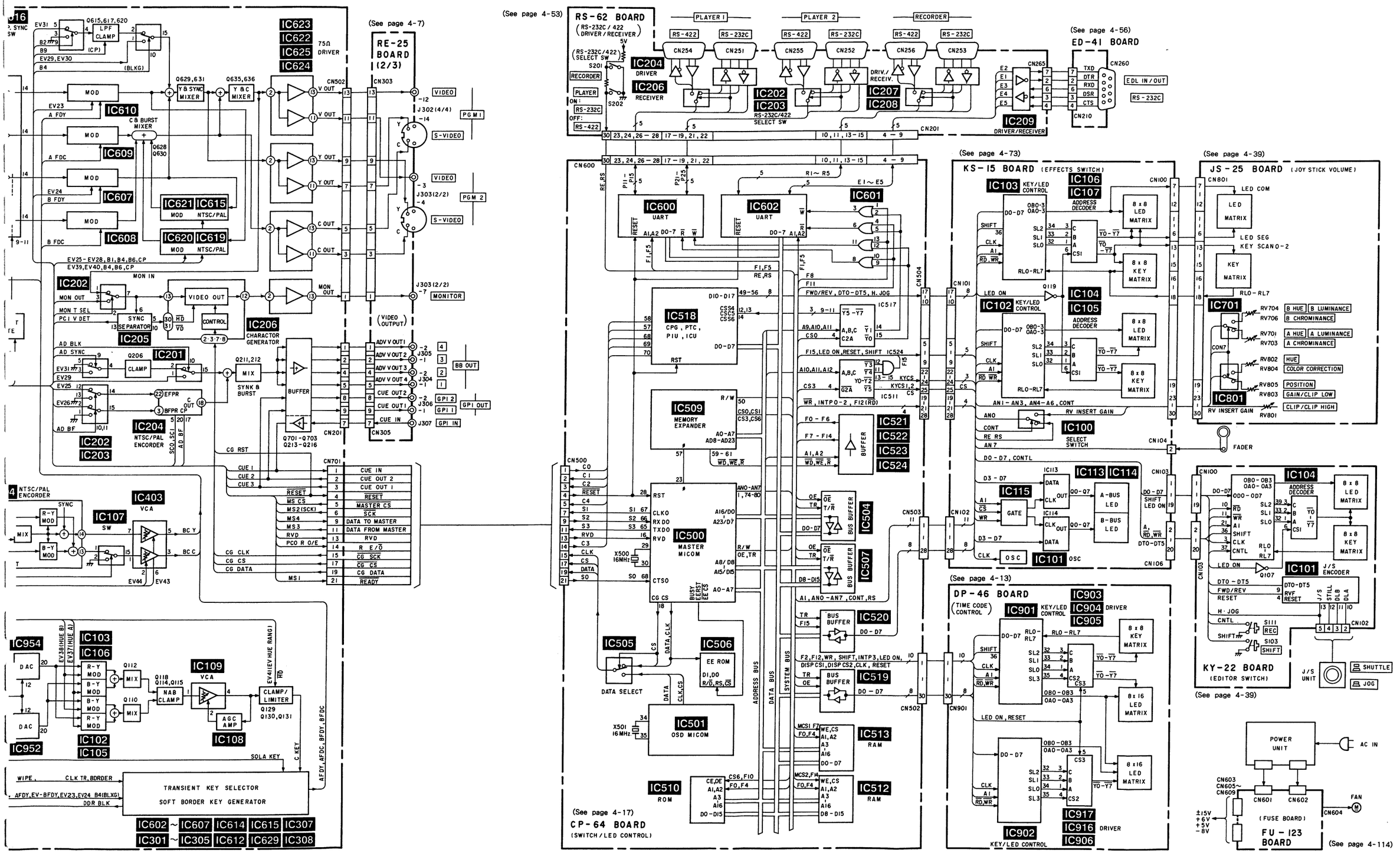



AM-32 BOARD
(See page 4-69)
MJ-65 BOARD
(See page 4-69)
RE-25 BOARD (See page 4-7)
MM-27 BOARD (B-LINE)
(See page 4-31, 35)
Same as the block below.
MM-27 BOARD (A-LINE)
(See page 4-31, 35)
DV-19 BOARD (See page 4-87-109)
FU-123 BOARD
(See page 4-114)
CP-64 BOARD
(See page 4-17)
RS-62 BOARD
(See page 4-55)
KS-15 BOARD
(See page 4-73)
JS-25 BOARD
(See page 4-39)
LEVEL METER
KEY BOARD
(See page 4-13)
KEY SCAN & MATRIX BLOCK
KEY DRIVE BLOCK
(See page 4-39)
I/O EXPANDER IC711 BLOCK
MAIN μ COMPUTER BLOCK IC730
EEROM BLOCK
8A CONVERTER BLOCK
WIPE PATTERN GENERATOR IC531
WIPE μ COMPUTER IC529
MEMORY μ COMPUTER IC516
SOFT WIPE GENERATOR IC301~308
KEY BLOCK (DIGITAL) LUMINANCE KEY CHROMA KEY
CHROMA KEY LUMINANCE KEY IC950 GATE ARRAY
8A CONVERTER IC952 954
ADV. SYNC GENERATOR IC523
SYNC GENE IC504
SYNC DRIVE IC507
H CENTER CONTROL IC515 517 519 521
4FSC PLL 0~90 DEG GEN
OSC
C HUE CONTROL IC 501 504 503 505 514
75 OHM DRIVER
TRANSIENT KEY SELECTOR
IC610 A Y ATT
IC609 A C ATT
IC611 B Y ATT
IC608 B C ATT
A CHROMA PLUS+BURST
B CHROMA PLUS
CHARACTOR GENERATOR IC205 260
ADV. SYNC GENERATOR IC201 204 206
CHROMA KEY GENERATOR
BORDER COLOR GENERATOR IC101 104 107
Y/C SEP IC004 002
Y/C SEP IC003 001
MASTER μ COMPUTER BLOCK
MEMORY BACKUP BLOCK IC512 513 516
SWITCHER KEY SCAN BLOCK
VOLUME SWITCH FADER LEVER IC100
LED DRIVE BLOCK
VOLUME JOY STICK BLOCK
AUDIO MUTE Q031 Q031 032
+8V REGULATOR IC002
-8V REGULATOR IC003
AUDIO AMP IC507 509 520 620 515 519 051 061 005 071 072
ELECTRONIC VOLUME DVCA IC512 513 CONTROL AMP IC001
ANALOG SWITCH IC510 511 518
AUDIO BUFFER IC505 605 506 606 603 516 616 004
MIC AMP IC081
NOISE FILTER Q083 081
OUTPUT AMPLIFIER IC501 401
INPUT BUFFER IC302 303 304 305 306 402 403
FRAME MEMORY IC201 202 IC211 212 IC221 222
DIGITAL CHROMA DECORDER DIGITAL NOISE REDUCTION IC181
W-APC VCO
MEMORY CONTROLLER IC301
SCROLL GATE ARRY IC351
DIGITAL CHROMA ENCORDER SPECIAL EFECTS GEN IC351
R-APC VCO IC371
MUTE PULSE GEN IC305 IC302 303 304
Y A/D CONVERTER IC101
C A/D CONVERTER IC121
WRITE TIMING GEN IC131 IC151 152 153 154
Y D/A CONVERTER IC401
C D/A CONVERTER IC421
READ TIMING GEN IC451 IC472

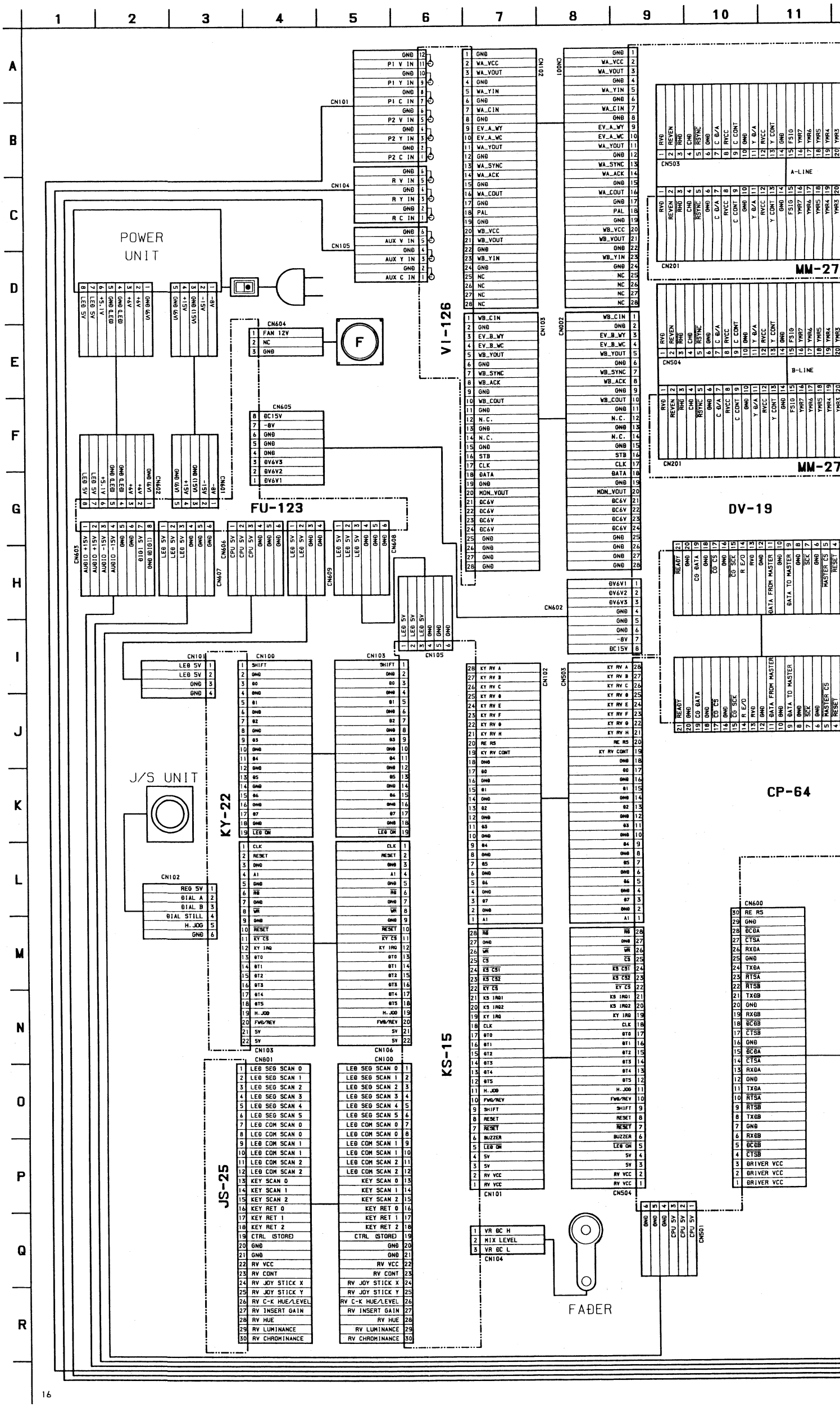
8. DETAILED BLOCK DIAGRAM




DV-19 BOARD
(EFFECTS CONTROL)
(See page 4-87~109)
MM-27 BOARD (A-LINE MEMORY BLOCK)
(See page 4-31,35)
MM-27 BOARD
(B-LINE MEMORY BLOCK)
(See page 4-31,35)
RE-25 BOARD (2/3)
(See page 4-7)
AS-46 BOARD
(See page 4-72)
RE-25 BOARD (3/3)
(AUDIO OUTPUT)
(See page 4-7)
IC005 SYNC DET.
IC002 A/D CONV.
IC004 Y/C SEPARATION
IC003 Y/C SEPARATION
IC001 A/D CONV.
IC101 A/D CONV.
IC121 A/D CONV.
IC181 DIGITAL CHROMA DECORDER
DIGITAL NOISE REDUCTION
IC201 IC202 IC211 IC212 IC221 IC222 RAM (FRAME MEMORY)
IC351 DIGITAL CHROMA ENCODER
SPECIAL EFFECTS GEN.
IC401 D/A CONV.
IC421 D/A CONV.
IC131 WRITE TIMING GEN.
IC301 MEMORY CONTROLLER
IC302~IC305 MUTE PULSE GEN.
IC331 IC932 SCROLL GATE ARRAY
IC451 READ TIMING GEN.
IC616 COMP. SYNC SW
IC623 IC622 IC625 IC624 75Ω DRIVER
IC610 C & BURST MIXER
IC609 IC607 IC608
IC621 IC615 IC620 IC619
IC404 IC405 IC406 IC407 SW
IC402 SELECT GATE
IC703 RESET
IC202 IC205 IC206 CHARACTOR GENERATOR
IC201 IC204 NTSC/PAL ENCORDER
IC202 IC203
IC006 SYNC DET.
IC501~IC508 IC514 SYNC GENERATOR
IC523 ADV SYNC GENERATOR
IC529 WIPE PROCESSOR
IC704~IC706 EVR DECORDER D/A
IC531 WIPE PATTERN GENERATOR
IC709 IC710 SETTING TUNNING EFFCT DATA ROM
IC730 MAIN MICRCOMPUTER
IC711 I/O EXPANDER
IC104 NTSC/PAL ENCORDER
IC403 VCA
IC107 SW
IC101 GATE
IC516 MEMORY CONTROL MICOM
IC522 D-LATCH
IC515 MIX AMP
IC520 IC620
IC519 BUFFER
IC051 IC061
IC301 IC401
IC954 IC952 IC950 LUMI KEY/ CHROMA KEY GATE AILEY
IC103 IC106 IC102 IC105
IC109 VCA
IC108 AGC AMP
IC001 INV. DCAMP
TRANSIENT KEY SELECTOR
SOFT BORDER KEY GENERATOR
IC602~IC607 IC614 IC615 IC307
IC301~IC305 IC612 IC629 IC308
LEVEL METER
AUDIO SELECT
DATA BUS
ADDRESS BUS
VIDEO
S-VIDEO
PGM 1
PGM 2
MONITOR
BB OUT
GPI OUT
CUE IN
CUE OUT 2
CUE OUT 1
RESET
MASTER CS
SCK
DATA TO MASTER
DATA FROM MASTER
RVD
R E/O
CG SCK
CG CS
CG DATA
READY


RS-62 BOARD
(RS-232C / 422 DRIVER / RECEIVER)
PLAYER 1
PLAYER 2
RECORDER
RS-422
RS-232C
IC204 DRIVER
IC206 RECEIVER
IC202 IC203 RS-232C/422 SELECT SW
IC207 IC208 DRIV./RECEIV
IC209 DRIVER/RECEIVER
CN254 CN251 CN255 CN252 CN256 CN253
CN201
(See page 4-56)
ED-41 BOARD
CN260
CN210
EDL IN/OUT
RS-232C
(See page 4-53)
(See page 4-7)
RE-25 BOARD (2/3)
IC623 IC622 IC625 IC624 75Ω DRIVER
CN303
CN502
CN305
VIDEO
PGM 1
PGM 2
S-VIDEO
MONITOR
BB OUT
GPI OUT
GPI IN
IC610 IC609 IC607 IC608 MOD
IC621 IC615 IC620 IC619 MOD NTSC/PAL
C8 BURST MIXER
Y8 SYNC MIXER
Y8C MIXER
Q615,617,620 LPF CLAMP
Q629,631
Q635,636
Q628 Q630
EV25-EV28,B1,B4,B6,CP
EV39,EV40,B4,B6,CP
MON IN
IC202 MON OUT
MON T SEL
PCI V DET
SYNC SEPARATOR
IC205 CONTROL
IC206 CHARACTOR GENERATOR
VIDEO OUT
MON OUT
(VIDEO OUTPUT)
ADV V OUT 1
ADV V OUT 2
ADV V OUT 3
ADV V OUT 4
CUE OUT 2
CUE OUT 1
CUE IN
IC201 Q206 CLAMP
Q211,212 MIX
SYNK 8 BURST
BUFFER
Q701-Q703 Q213-Q216
IC204 NTSC/PAL ENCORDER
IC202 IC203
CG RST
CUE 1
CUE 2
CUE 3
CN701
CUE IN
CUE OUT 2
CUE OUT 1
RESET
MS CS
MS2(SCK)
MS4
MS3
RVD
PCO R O/E
CG CLK
CG CS
CG DATA
MSI
MASTER CS
SCK
DATA TO MASTER
DATA FROM MASTER
R E/O
CG SCK
CG CS
CG DATA
READY
4 NTSC/PAL ENCORDER
IC403 VCA
IC107 SW
EV44
EV43
IC954 IC952 DAC
IC103 IC106 IC102 IC105 R-Y MOD B-Y MOD
IC109 VCA
Q112 Q110 MIX
Q118 Q114,Q115 NAB CLAMP
Q129 Q130,Q131 CLAMP/LIMITER
IC108 AGC AMP
SOLA KEY
C KEY
WIPE, CLK TR, BDRDER
AFDY, EV-BFDY, EV23, EV24 B4(BLXG)
DDR BLK
TRANSIENT KEY SELECTOR
SOFT BORDER KEY GENERATOR
IC602 ~ IC607 IC614 IC615 IC307
IC301 ~ IC305 IC612 IC629 IC308
IC600 UART
IC602 UART
IC601
IC518 CPG, PTC, PIU, ICU
IC509 MEMORY EXPANDER
IC500 MASTER MICOM
X500 16MHz
IC505 DATA SELECT
IC506 EE ROM
IC501 OSD MICOM
X501 16MHz
IC510 ROM
IC521 IC522 IC523 IC524 BUFFER
IC504 IC507 BUS BUFFER
IC520 IC519 BUS BUFFER
IC513 IC512 RAM
CN500
CN600
CN504
CN503
CN502
ADDRESS BUS
DATA BUS
SYSTEM BUS
(See page 4-17)
CP-64 BOARD
(SWITCH / LED CONTROL)
(See page 4-73)
KS-15 BOARD (EFFECTS SWITCH)
IC103 KEY/LED CONTROL
IC106 IC107 ADDRESS DECODER
8 x 8 LED MATRIX
8 x 8 KEY MATRIX
IC102 KEY/LED CONTROL
IC104 IC105 ADDRESS DECODER
IC100 SELECT SWITCH
RV INSERT GAIN
CN100
CN101
CN104
CN105
FADER
(See page 4-39)
JS-25 BOARD (JOY STICK VOLUME)
CN801
LED COM
LED SEG
KEY SCAN0-2
RLO-RL7
IC701
RV704 B HUE B LUMINANCE
RV706 B CHROMINANCE
RV701 A HUE A LUMINANCE
RV703 A CHROMINANCE
RV802 HUE
RV804 COLOR CORRECTION
RV805 POSITION
RV803 GAIN/CLIP LOW
RV801 CLIP/CLIP HIGH
IC801
IC104 IC113 IC114 IC115 GATE
IC101 OSC
IC101 J/S ENCODER
Q107
S111 REC
S103 SHIFT
J/S UNIT
SHUTTLE
JOG
KY-22 BOARD
(EDITOR SWITCH)
(See page 4-13)
DP-46 BOARD
(TIME CODE CONTROL)
IC901 KEY/LED CONTROL
IC903 IC904 IC905 DRIVER
IC902 KEY/LED CONTROL
IC917 IC916 IC906 DRIVER
8 x 16 LED MATRIX
CN901
CN902
POWER UNIT
AC IN
CN603 CN605 CN609
CN601 CN602
FAN
CN604
(FUSE BOARD)
FU-123 BOARD
±15V +6V +5V -8V
(See page 4-114)

SECTION 4
PRINTED WIRING BOARDS AND DIAGRAMS
1. FRAME SCHEMATIC DIAGRAM



THIS NOTE IS COMMON FOR PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS.
(In addition to this, the necessary note is printed in each block.)

For printed wiring boards:

- ○——— : indicated a lead wire mounted on the component side.
- ○ : Through hole.
- ▒▒▒ : Pattern from the side which enables seeing.

(Other pattern is not shown.)

Caution :	
Side A: (Conductor Side)	Parts on the pattern face side seen from the pattern face are indicated.
Side B: (Component side)	Parts on the parts face side seen from the parts face are indicated.

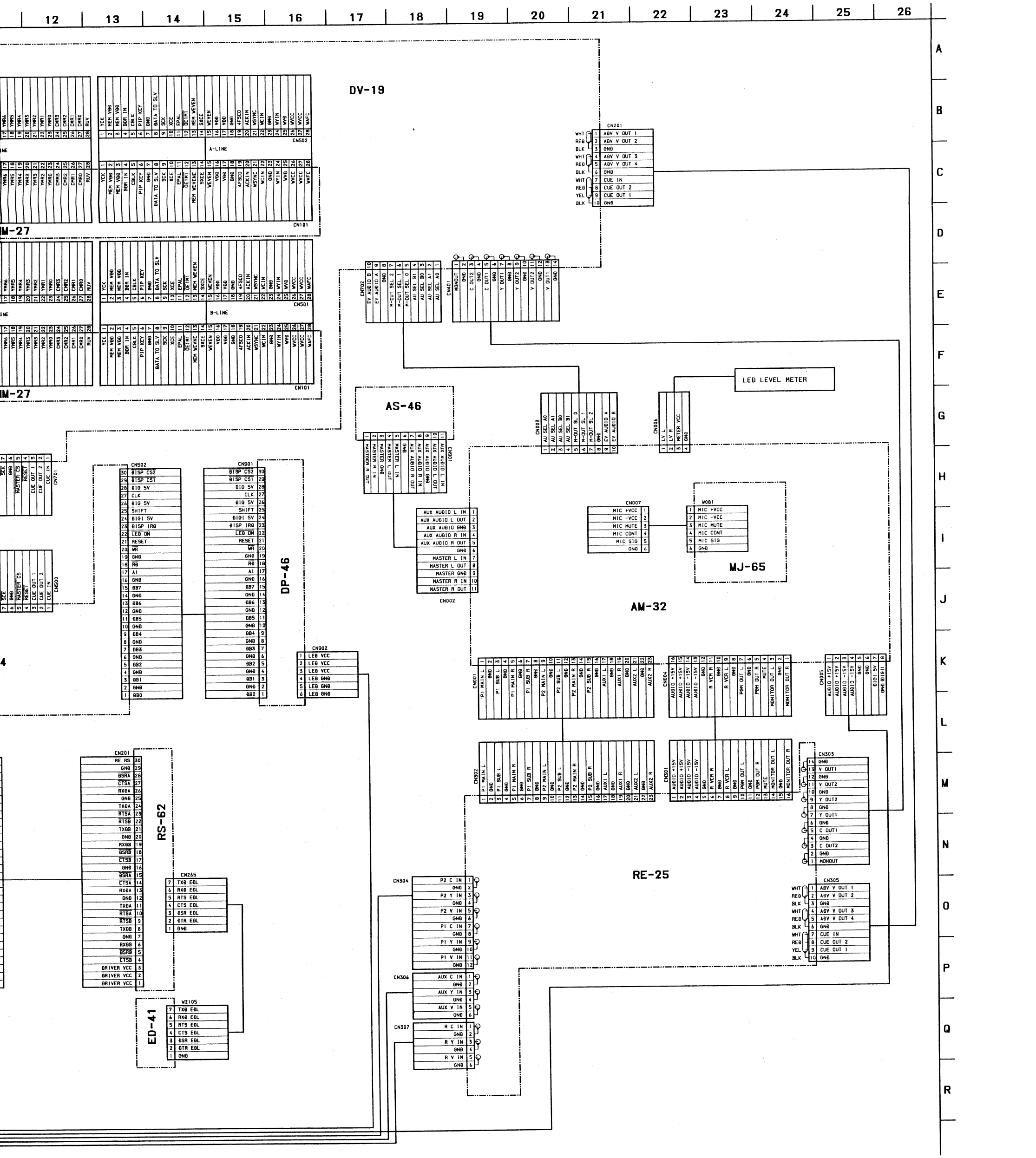
For schematic diagram:

- Caution when replacing chip parts.
  New parts must be attached after removal of chip.
  Be careful not to heat the minus side of tantalum capacitor, because it is damaged by the heat.
- All resistors are in ohms, 1/4 W unless otherwise noted.
  Chip resistors: 1/10 W unless otherwise noted.
  kΩ : 1000 Ω , MΩ : 1000kΩ .
- All capacitors are in μF unless otherwise noted. pF: μμF.
  50V or less are not indicated except for electrolytics and tantalums.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- ⊣▭⊢ : nonflammable resistor.
- ⊣∿⊢ : fusible resistor.
- ▭ : panel designation.
- △ : internal component.*
- ——— : B + Line.*
- - - - : B − Line.*
- ⇨ : IN/OUT direction of B line (+, −).*
- Circled numbers refer to waveforms.*
- Voltage are dc between ground and measurement point when color bar is connected to PLAYER 1 and PLAYER 2.
  (input impedance: dc 10MΩ)
- Readings are taken with a color-bar signal input.*
- Readings are taken with a digital multimeter (DC10 MΩ).*
- Voltage are taken with a VOM (input impedance 10 MΩ).
- Voltage variations may be noted due to normal production tolerances.

Note : The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

When indicating parts by reference number, please include the board name.

- * : indicated by the color red.

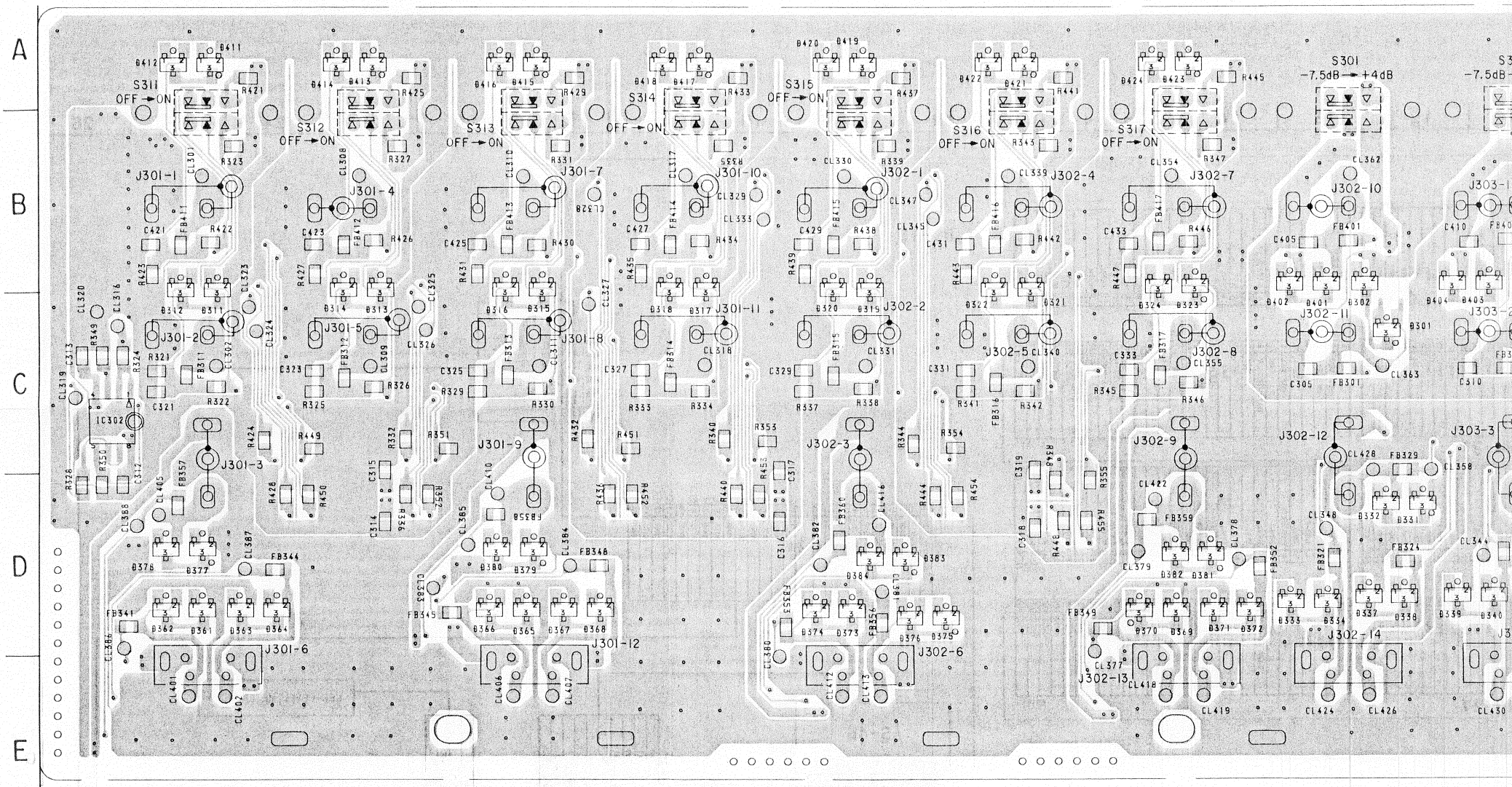

12 13 14 15 16 17 18 19 20 21 22 23 24 25 26
A B C D E F G H I J K L M N O P Q R
DV-19
CN502
A-LINE
CN101
IM-27
B-LINE
CN501
CN701
CN500
CN702
CN401
CN003
CN006
LED LEVEL METER
AS-46
CN901
CN002
CN007
W081
MJ-65
AM-32
DP-46
CN902
CN001
CN004
CN005
CN502
CN901
CN201
RS-62
CN265
W2105
ED-41
CN302
CN301
CN303
CN304
CN306
CN307
CN305
RE-25

2. PRINTED WIRING BOARDS AND DIAGRAMS

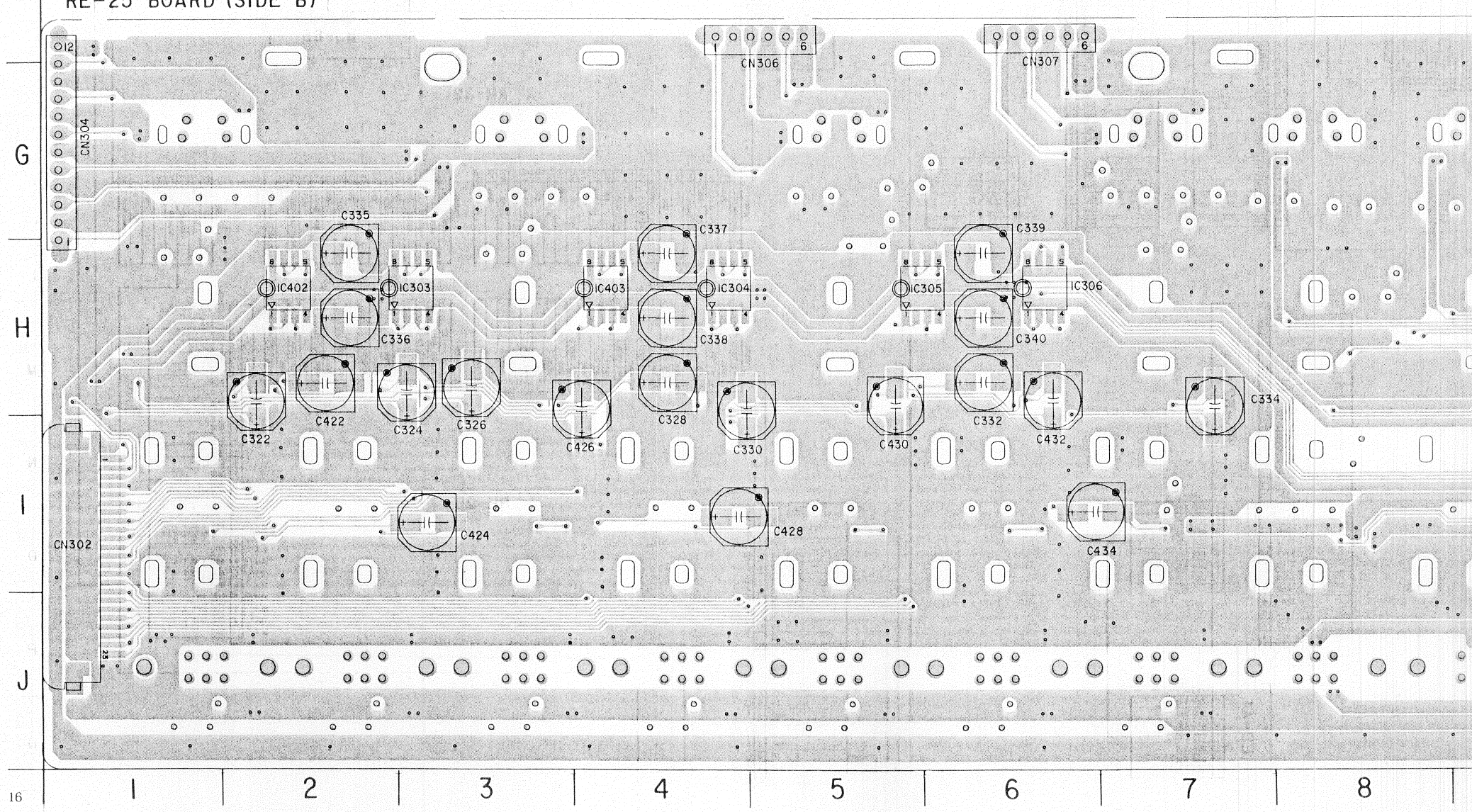
RE-25 (VIDEO, AUDIO INPUT/OUTPUT) PRINTED WIRING BOARD

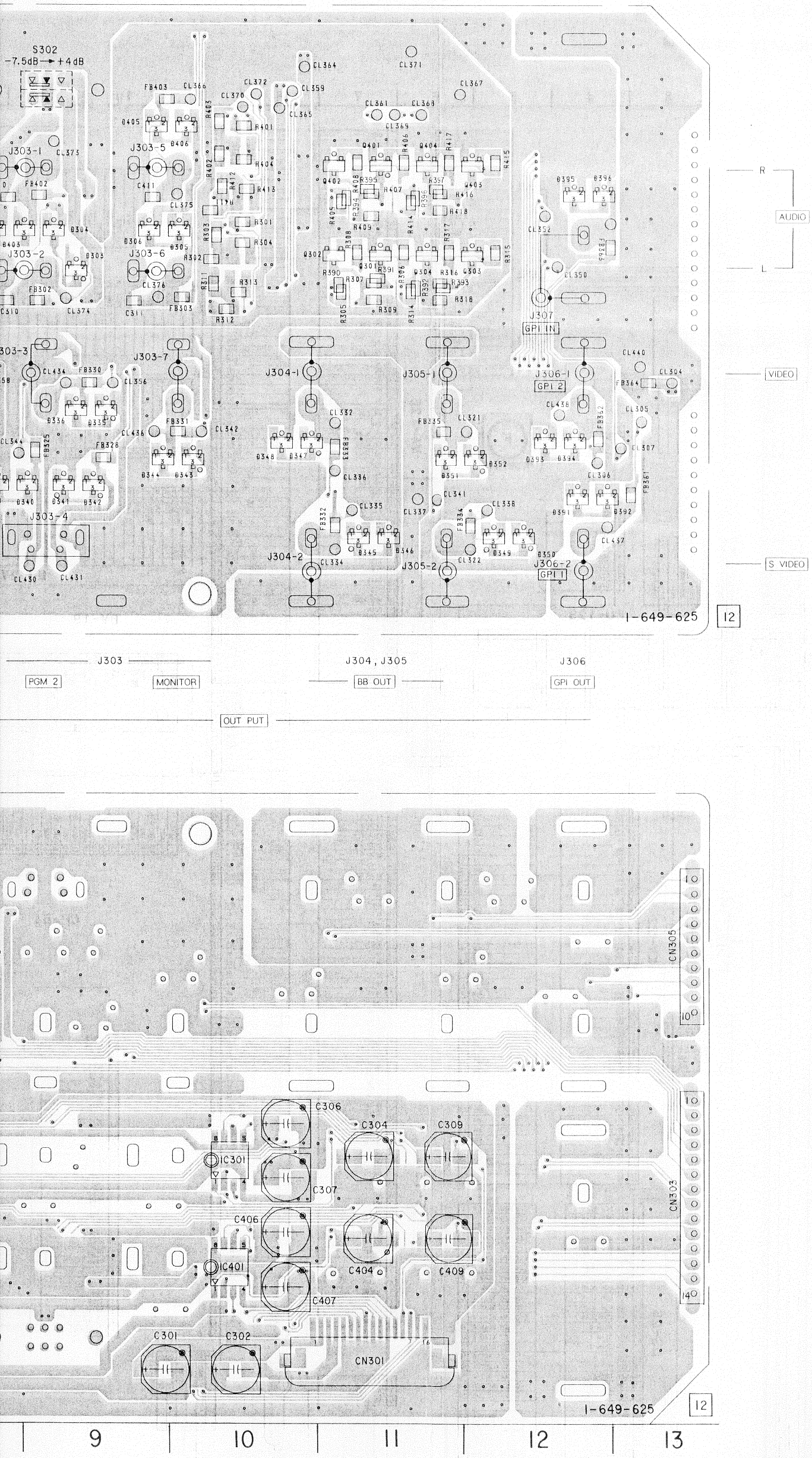
– Ref No. RE-25 BOARD : 3,000 Seriese –

RE-25 BOARD (SIDE A)



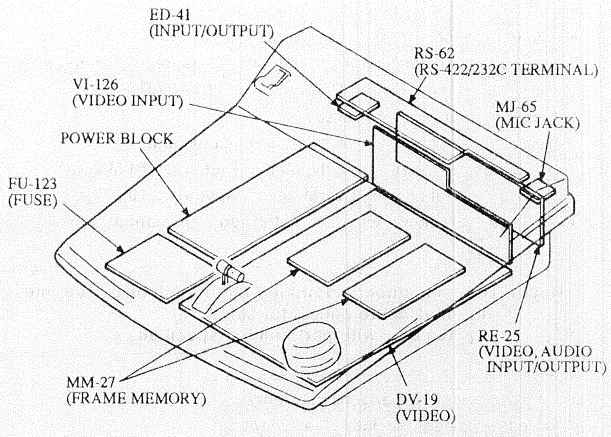
RE-25 BOARD (SIDE B)





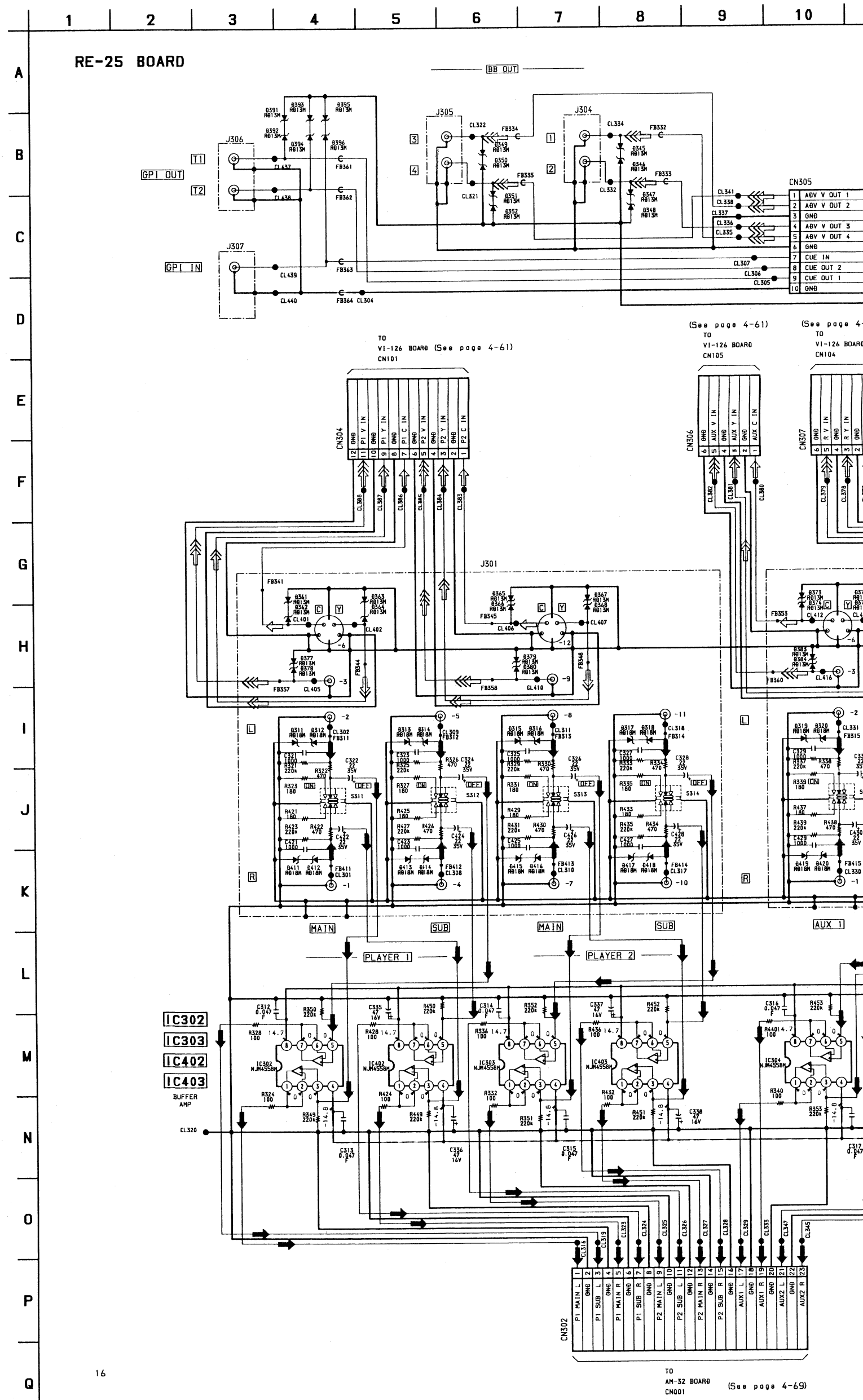
RE-25 BOARD

CN301	J-11	D371	D-7
CN302	I-1	D372	D-7
CN303	I-13	D373	D-5
CN304	G-1	D374	D-5
CN305	G-13	D375	D-5
CN306	F-5	D376	D-5
CN307	F-6	D377	D-1
		D378	D-1
D301	C-8	D379	D-3
D302	B-8	D380	D-3
D303	C-9	D381	D-7
D304	B-9	D382	D-7
D305	B-10	D383	D-5
D306	B-9	D384	D-5
D311	C-1	D391	D-12
D312	C-1	D392	D-12
D313	B-2	D393	D-12
D314	B-2	D394	D-12
D315	C-3	D395	B-12
D316	C-3	D396	B-12
D317	B-4	D401	B-8
D318	B-4	D402	B-7
D319	B-5	D403	B-8
D320	B-5	D404	B-8
D321	B-6	D405	B-9
D322	B-6	D406	B-10
D323	B-7	D411	A-1
D324	B-7	D412	A-1
D331	D-8	D413	A-2
D332	D-8	D414	A-2
D333	D-7	D415	A-3
D334	D-8	D416	A-3
D335	D-9	D417	A-4
D336	D-9	D418	A-4
D337	D-8	D419	A-5
D338	D-8	D420	A-5
D339	D-8	D421	A-6
D340	D-9	D422	A-6
D341	D-9	D423	A-7
D342	D-9	D424	A-6
D343	D-10		
D344	D-9	IC301	I-10
D345	E-11	IC302	C-1
D346	E-11	IC303	H-3
D347	D-10	IC304	H-4
D348	D-10	IC305	H-5
D349	E-12	IC306	H-6
D350	E-12	IC401	I-10
D351	D-12	IC402	H-2
D352	D-12	IC403	H-4
D361	D-1		
D362	D-1	Q301	C-11
D363	D-2	Q302	C-11
D364	D-2	Q303	C-12
D365	D-3	Q304	C-11
D366	D-3	Q401	B-11
D367	D-3	Q402	B-11
D368	D-3	Q403	B-12
D369	D-7	Q404	B-11
D370	D-7		



RE-25 (VIDEO,AUDIO INPUT/OUTPUT) SCHEMATIC DIAGRAM

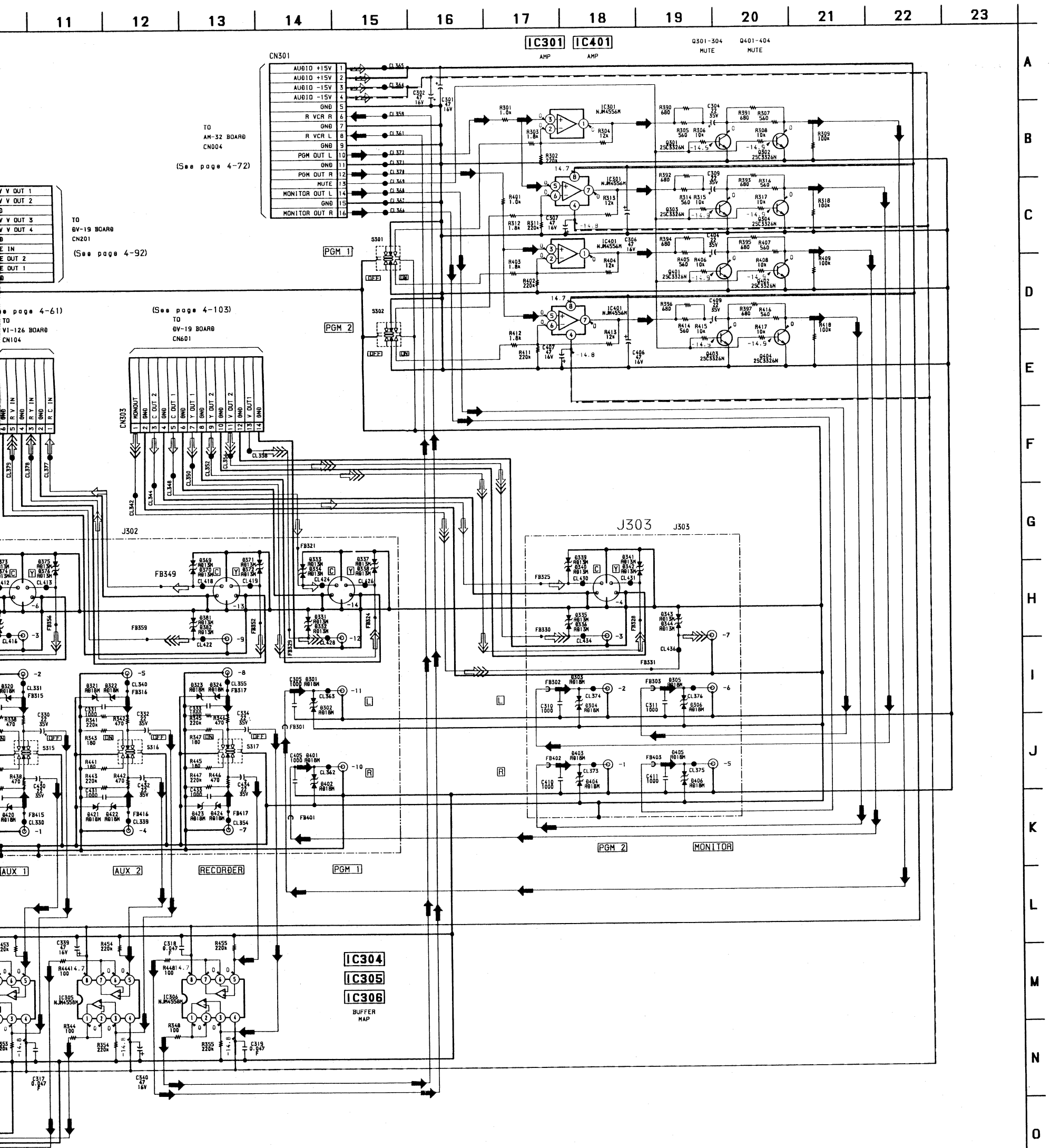
– Ref No. RE-25 BOARD : 3,000 Seriese –



16

• **SIGNAL PATH (ANALOG)**

VIDEO SIGNAL			AUDIO SIGNAL
CHROMA	Y	Y/CHROMA	
⇨	⇨	⇨	➡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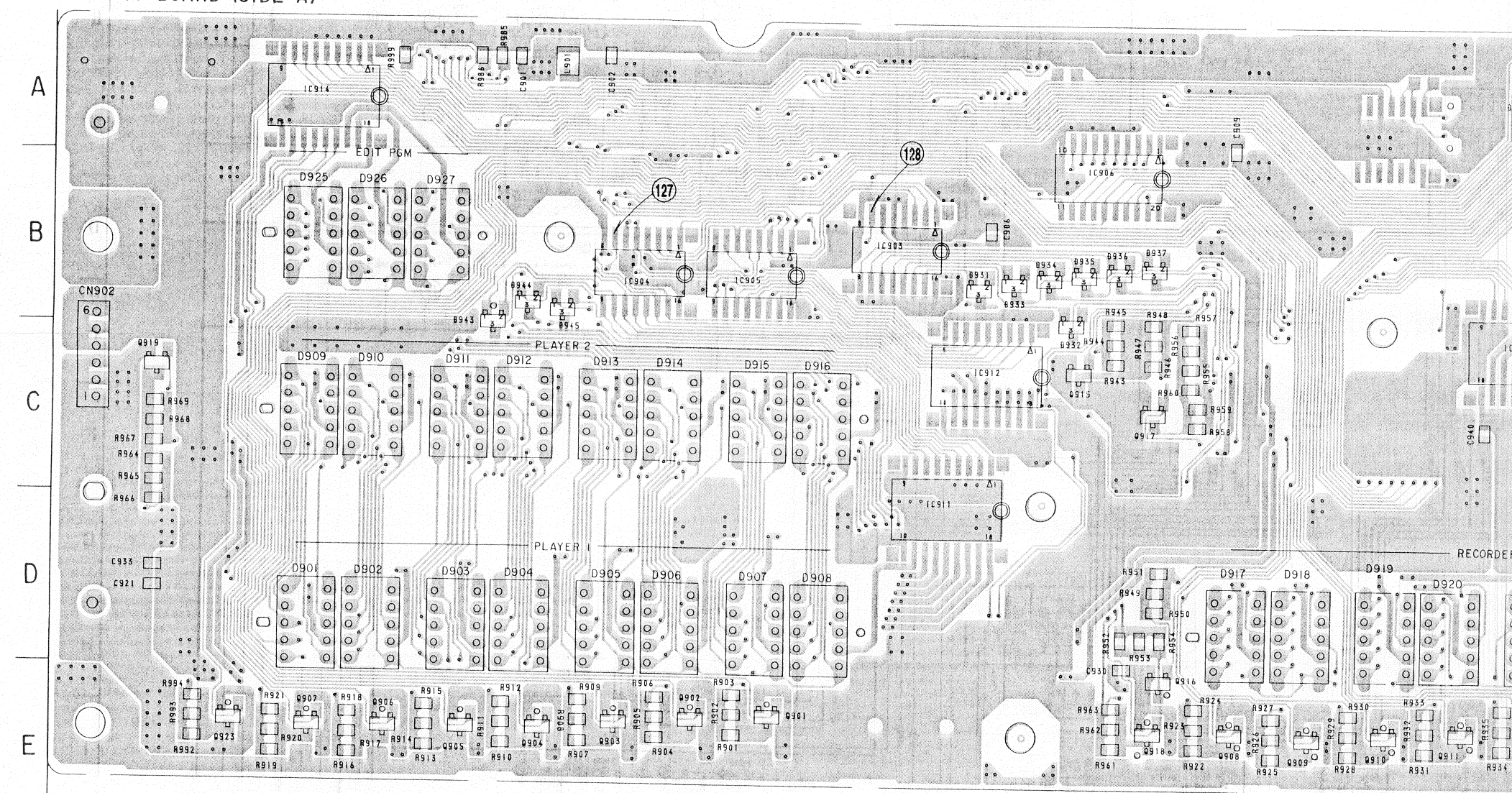
M
N
O
P
Q
IC301 AMP
IC401 AMP
Q301-304 MUTE
Q401-404 MUTE
CN301
AUDIO +15V
AUDIO +15V
AUDIO -15V
AUDIO -15V
GND
R VCR R
GND
R VCR L
GND
PGM OUT L
GND
PGM OUT R
MUTE
MONITOR OUT L
GND
MONITOR OUT R
TO AM-32 BOARD CN004
(See page 4-72)
TO 8V-19 BOARD CN201
(See page 4-92)
(See page 4-61)
TO VI-126 BOARD CN104
(See page 4-103)
TO 8V-19 BOARD CN601
CN303
MONOUT
GND
C OUT 2
GND
C OUT 1
GND
Y OUT 1
GND
Y OUT 2
GND
V OUT 2
GND
V OUT1
GND
R V IN
GND
R Y IN
GND
R C IN
S301
S302
PGM 1
PGM 2
OFF
ON
J302
J303
FB349
FB359
FB321
FB325
FB330
FB328
FB331
FB301
FB401
FB315
FB316
FB317
FB415
FB416
FB417
FB402
FB403
L
R
AUX 1
AUX 2
RECORDER
PGM 1
PGM 2
MONITOR
IC304
IC305
IC306
BUFFER MAP

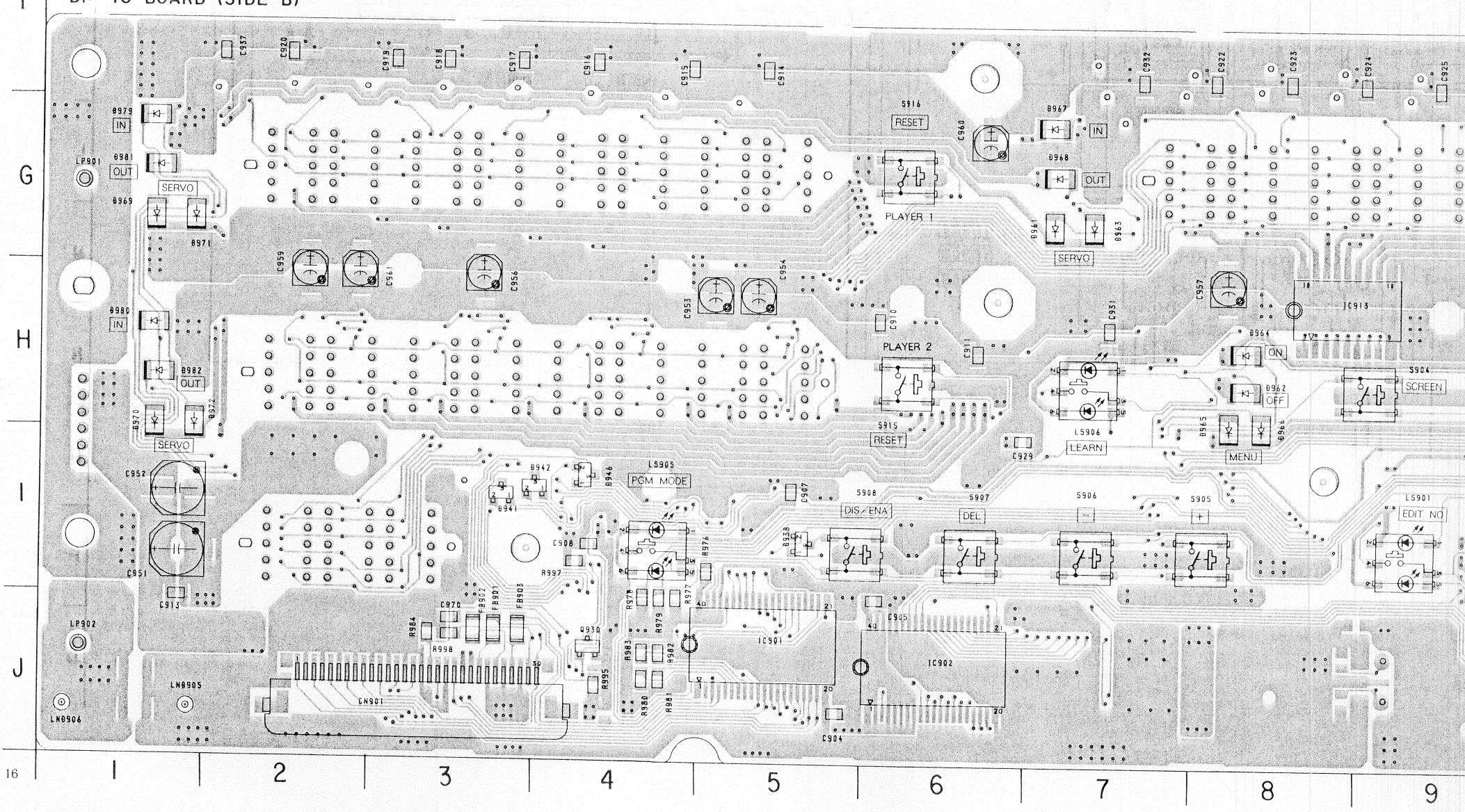
DP-46 (DISPLAY) PRINTED WIRING BOARD

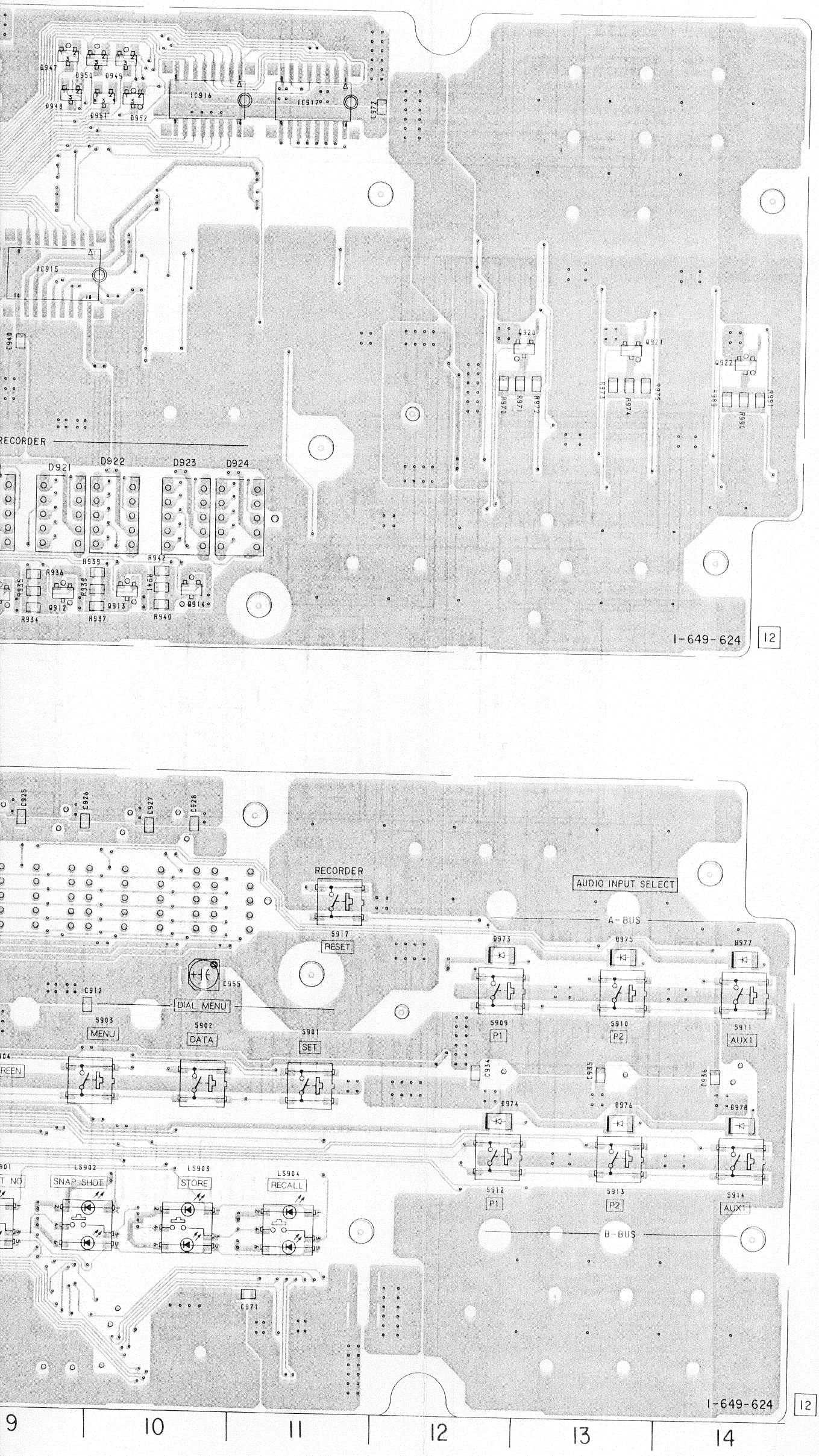
– Ref No. DP-46 BOARD : 2,000 Seriese –

DP-46 BOARD (SIDE A)



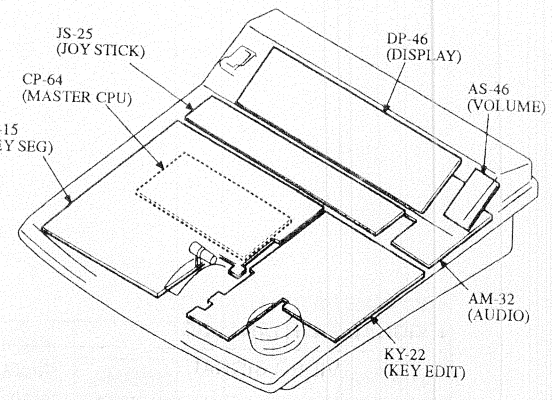
DP-46 BOARD (SIDE B)





DP-46 BOARD

CN901	J-3	D967	G-7
CN902	B-1	D968	G-7
		D969	G-1
D901	D-2	D970	H-1
D902	D-2	D971	G-1
D903	D-3	D972	H-1
D904	D-3	D973	G-12
D905	D-4	D974	H-12
D906	D-4	D975	G-13
D907	D-5	D976	H-13
D908	D-5	D977	G-14
D909	C-2	D978	H-14
D910	C-2	D979	G-1
D911	C-3	D980	H-1
D912	C-3	D981	G-1
D913	C-4	D982	H-1
D914	C-4		
D915	C-5	IC901	J-5
D916	C-5	IC902	J-6
D917	D-7	IC903	B-5
D918	D-8	IC904	B-4
D919	D-8	IC905	B-4
D920	D-9	IC906	A-7
D921	D-9	IC911	C-6
D922	D-9	IC912	C-6
D923	D-10	IC913	H-8
D924	D-10	IC914	A-2
D925	B-2	IC915	B-9
D926	B-2	IC916	A-10
D927	B-3	IC917	A-11
D931	B-6		
D932	B-6	Q901	E-5
D933	B-6	Q902	E-4
D934	B-6	Q903	E-4
D935	B-6	Q904	E-3
D936	B-7	Q905	E-3
D937	B-7	Q906	E-2
D938	I-5	Q907	E-2
D941	I-3	Q908	E-7
D942	I-3	Q909	E-8
D943	B-3	Q910	E-8
D944	B-3	Q911	E-9
D945	B-3	Q912	E-9
D946	I-4	Q913	E-10
D947	A-9	Q914	E-10
D948	A-9	Q915	C-6
D949	A-9	Q916	E-7
D950	A-9	Q917	C-7
D951	A-9	Q918	E-7
D952	A-10	Q919	C-1
D961	G-7	Q920	C-12
D962	H-8	Q921	C-13
D963	G-7	Q922	C-14
D964	H-8	Q923	E-2
D965	H-8	Q930	J-4
D966	H-8		

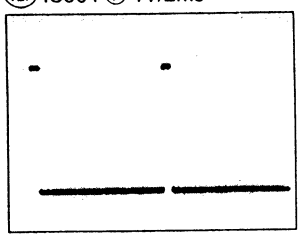


DP-46 (DISPLAY) SCHEMATIC DIAGRAM

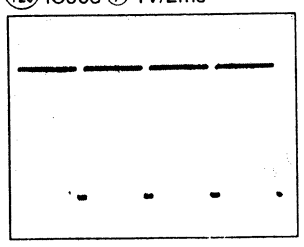
– Ref No. DP-46 BOARD : 2,000 Seriese –

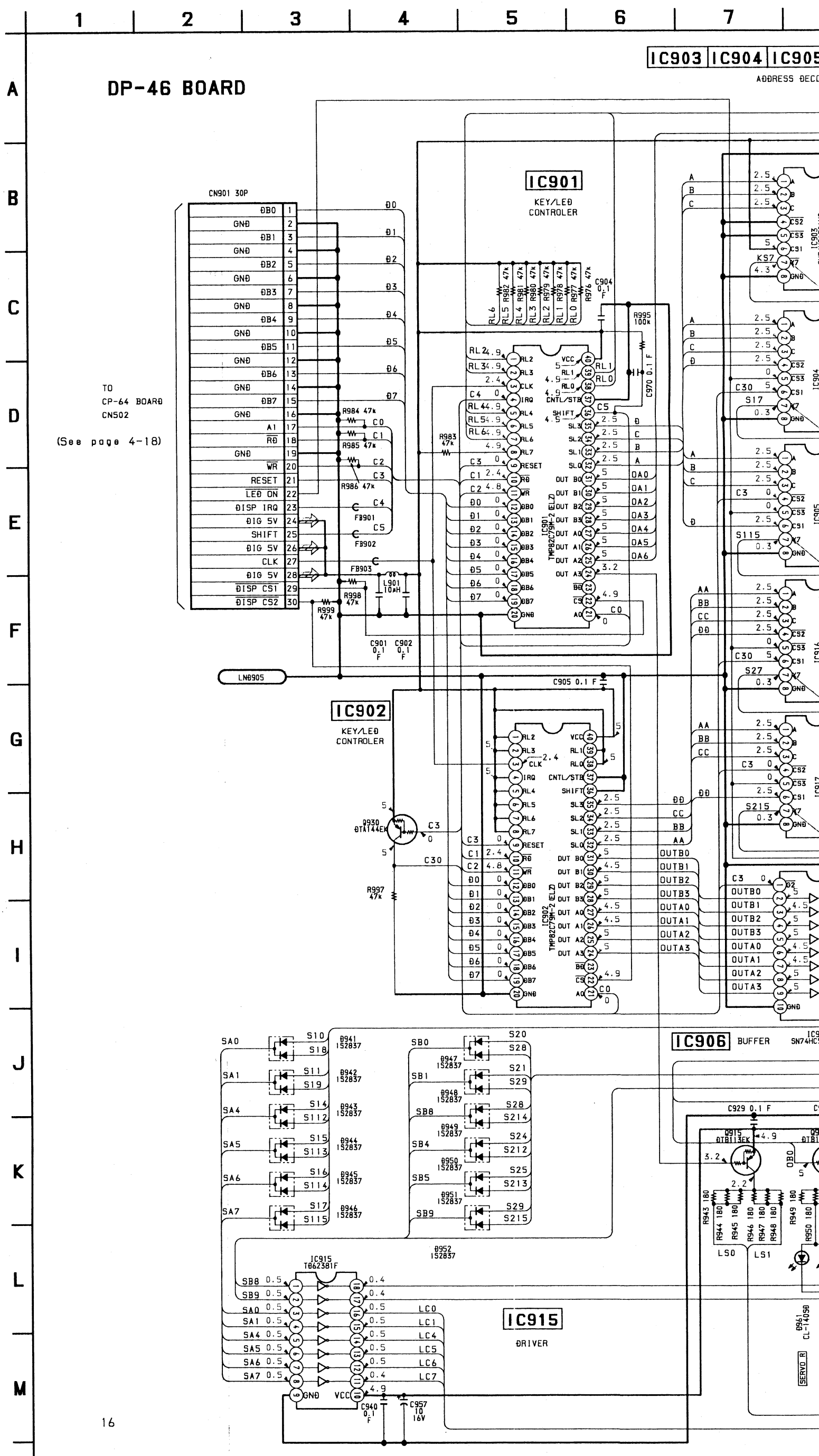
DP-46 board

(127) IC904 ⑦ 1V/2ms



(128) IC903 ⑦ 1V/2ms





IC905 | IC916 | IC917

DRESS DECODER

LN0907
LN0908

KS7 KS6 KS5 KS4 KS3 KS2 KS1 KS0

D938 1S2835 D937 1S2835 D936 1S2835 D935 1S2835 D934 1S2835 D933 1S2835 D932 1S2835 D931 1S2835

SCREEN S904 | MENU S903 | DATA S902 | SET S901 | RECALL | STORE | SNAP SHOT | EDIT ON

LS904 LS22BB2S0/S0 LS903 LS22BB2S0/S0 LS902 LS22BB2S0/S0 LS901 LS22BB2S0/S0

LS906 LS22BB2S0/S0 LS905 LS22BB2S0/S0

LEARN | PGM MODE

S908 DIS/ENA | S907 DEL | S906 - | S905 +

RL0 RL1 RL2 RL3

S911 A AUX | S910 A-P2 | S909 A-P1

S914 B AUX | B-P2 S913 | S912 B-P1

RESET R S917 | RESET P1 S916 | RESET P2 S915

C906 0.1 F C907 0.1 F C908 0.1 F C971 0.1 F C972 0.1 F C909 0.1 F

IC903 SN74HC138ANS IC904 SN74HC238ANS IC905 SN74HC238ANS IC916 SN74HC238ANS IC917 SN74HC238ANS IC906 SN74HC541ANS

S10 S11 S12 S13 S14 S15 S16 S18 S19 S110 S111 S112 S113 S114 S20 S21 S22 S23 S24 S25 S26 S28 S29 S210 S211 S212 S213 S214

IC911 | IC912 | IC913 | IC914 DRIVER

IC911 T062381F IC912 T062381F IC913 T062381F IC914 T062381F

E10 E11 E12 E13 E14 E15 E16 E17 E18 E19 E110 E111 E112 E113 E114 E115 E20 E21 E22 E23 E24 E25 E26 E27 E210 E211 E212

SB0 SB1 SB4 SB5 SB8 SY0 SY1 SY4 SY5 SS8

C910 0.1 F C911 0.1 F C912 0.1 F C913 0.1 F C953 10 16V C954 10 16V C955 10 16V C956 10 16V

C914 0.1 F C915 0.1 F C916 0.1 F C917 0.1 F C918 0.1 F C919 0.1 F C920 0.1 F C959 10 16V

Q901 DTB113EK Q902 DTB113EK Q903 DTB113EK Q904 DTB113EK Q905 DTB113EK Q906 DTB113EK Q907 DTB113EK

R901 180 R902 R903 180 R904 180 R905 R906 180 R907 180 R908 R909 180 R910 180 R911 R912 180 R913 180 R914 R915 180 R916 180 R917 R918 180 R919 180 R920 R921 180

Q901-907 SEGMENT DRIVER

D901 LA-301VL D902 LA-301VL D903 LA-301VL D904 LA-301VL D905 LA-301VL D906 LA-301VL D907 LA-301VL

D909 LA-301VL D910 LA-301VL D911 LA-301VL D912 LA-301VL D913 LA-301VL D914 LA-301VL D915 LA-301VL

C922 0.1 F C923 0.1 F C924 0.1 F C925 0.1 F C926 0.1 F C927 0.1 F C928 0.1 F C960 10 16V

Q908 DTB113EK Q909 DTB113EK Q910 DTB113EK Q911 DTB113EK Q912 DTB113EK Q913 DTB113EK Q914 DTB113EK

R922 180 R923 R924 180 R925 180 R926 R927 180 R928 180 R929 R930 180 R931 180 R932 R933 180 R934 180 R935 R936 180 R937 180 R938 R939 180 R940 180 R941 R942 180

Q908-914 SEGMENT DRIVER

D917 LA-301VL D918 LA-301VL D919 LA-301VL D920 LA-301VL D921 LA-301VL D922 LA-301VL D923 LA-301VL

EDIT PGM

C930 0.1 F C931 0.1 F C932 0.1 F C933 0.1 F C934 0.1 F C935 0.1 F C936 0.1 F C937 0.1 F C961 10 16V

D925 LA-301VL D926 LA-301VL D927 LA-301VL

Q916 DTB113EK Q917 DTB113EK Q918 DTB113EK Q919 DTB113EK Q920 DTB113EK Q921 DTB113EK Q922 DTB113EK Q923 DTB113EK

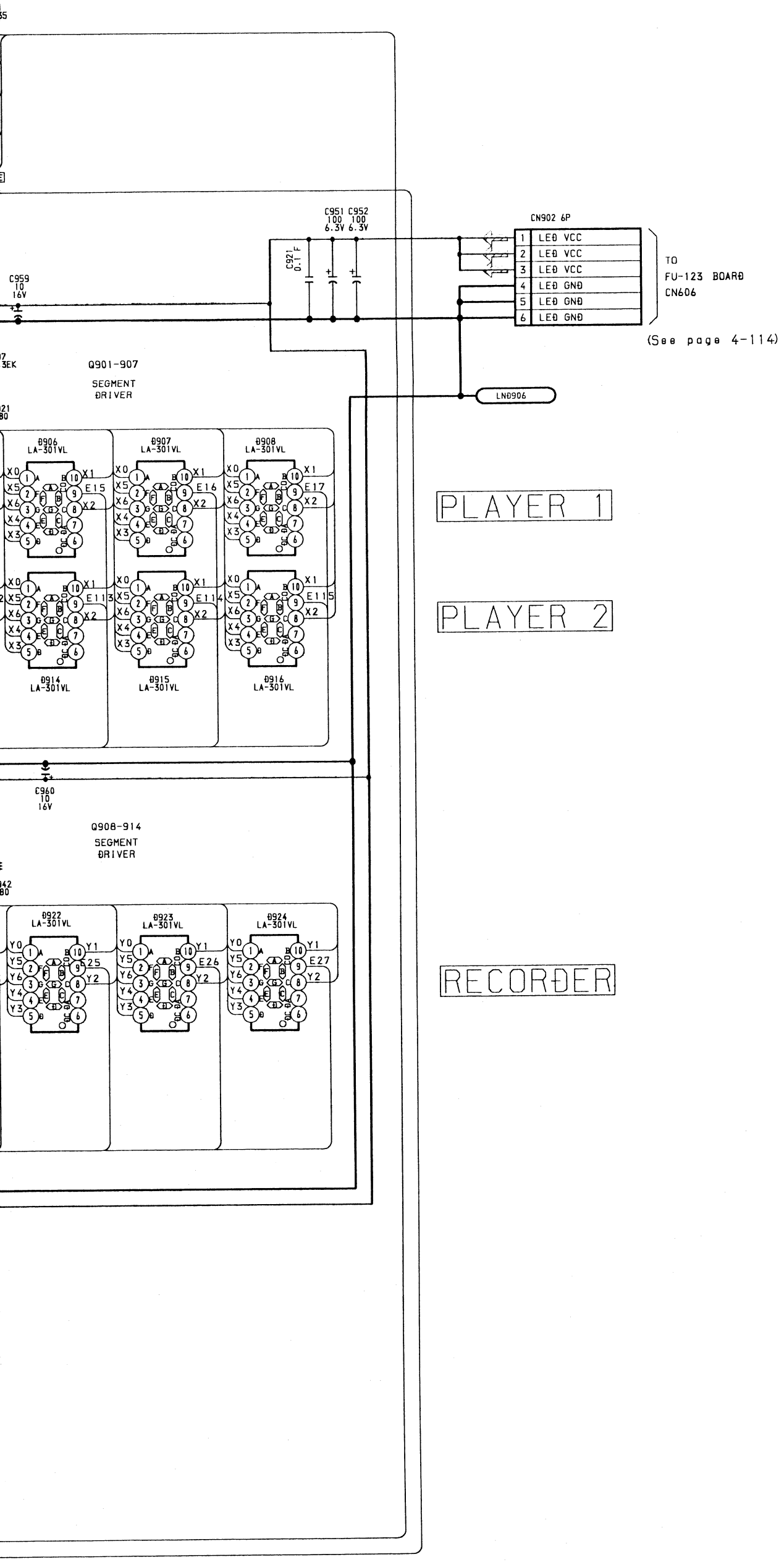
R948 180 R949 180 R950 R951 180 R952 R953 180 R954 180 R955 180 R956 R957 180 R958 R959 180 R960 180 R961 180 R962 R963 180 R964 180 R965 R966 180 R967 R968 180 R969 180 R970 180 R971 R972 180 R973 180 R974 R975 180 R989 180 R990 R991 180 R992 180 R993 R994 180

D961 CL-140SB D962 CL-140SB D963 CL-140SB D964 CL-140SB D965 CL-140SB D966 CL-140SB D967 CL-140SB D968 CL-140SB D969 CL-140SB D970 CL-140SB D971 CL-140SB D972 CL-140SB D973 CL-140SB D974 CL-140SB D975 CL-140SB D976 CL-140SB D977 CL-140SB D978 CL-140SB D979 CL-140SB D980 CL-140SB D981 CL-140SB D982 CL-140SB

SERVO R | SCREEN OFF | SERVO R | SCREEN ON | SCREEN MENU | SCREEN MENU | IN R | OUT R | SERVO P1 | SERVO P2 | SERVO P1 | SERVO P2 | AUDIO A P1 | AUDIO B P1 | AUDIO A P2 | AUDIO B P2 | AUDIO A AUX1 | AUDIO B AUX2 | IN P1 | IN P2 | OUT P1 | OUT P2

Q915-923 LED SWITCH

17 | 18 | 19 | 20 | 21 | 22



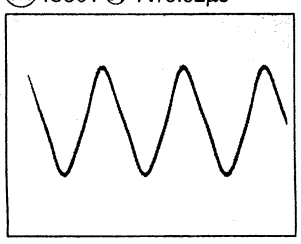
DISPLAY

CP-64 (MASTER CPU) SCHEMATIC DIAGRAM

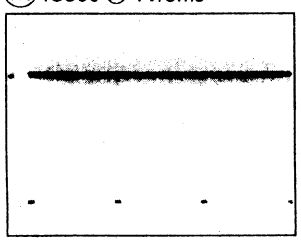
– Ref No. CP-64 BOARD : 2,000 Seriese –

CP-64 board

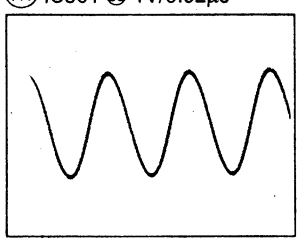
(110) IC501 (34) 1V/0.02µs



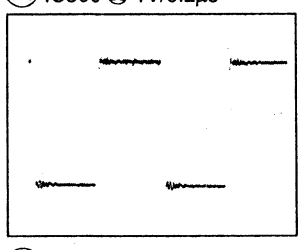
(116) IC500 (63) 1V/5ms



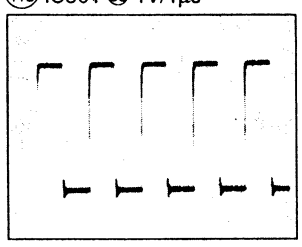
(111) IC501 (35) 1V/0.02µs



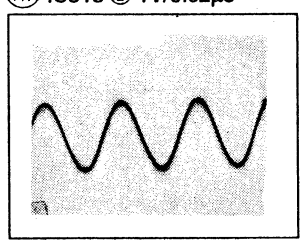
(116) IC500 (63) 1V/0.2µs



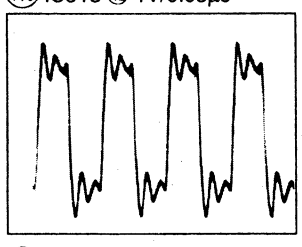
(112) IC501 (39) 1V/1µs



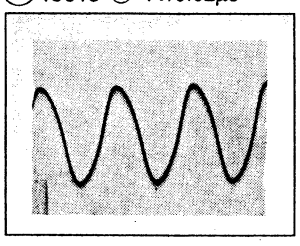
(117) IC518 (2) 1V/0.02µs



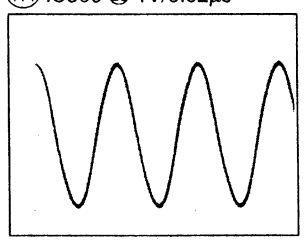
(113) IC518 (42) 1V/0.05µs



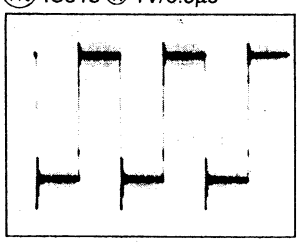
(118) IC518 (3) 1V/0.02µs



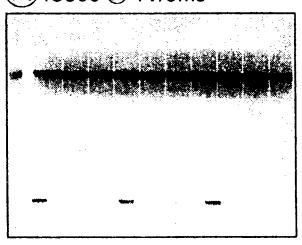
(114) IC500 (29) 1V/0.02µs



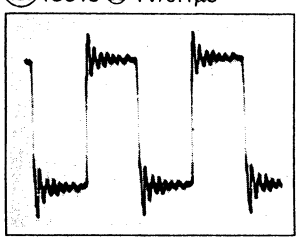
(119) IC518 (41) 1V/0.5µs



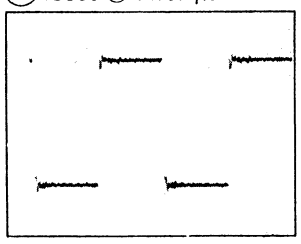
(115) IC500 (67) 1V/5ms



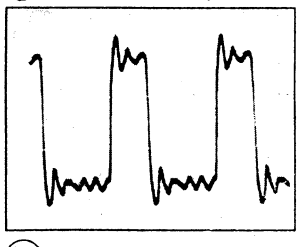
(120) IC518 (39) 1V/0.1µs



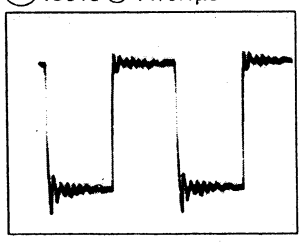
(115) IC500 (67) 1V/0.2µs

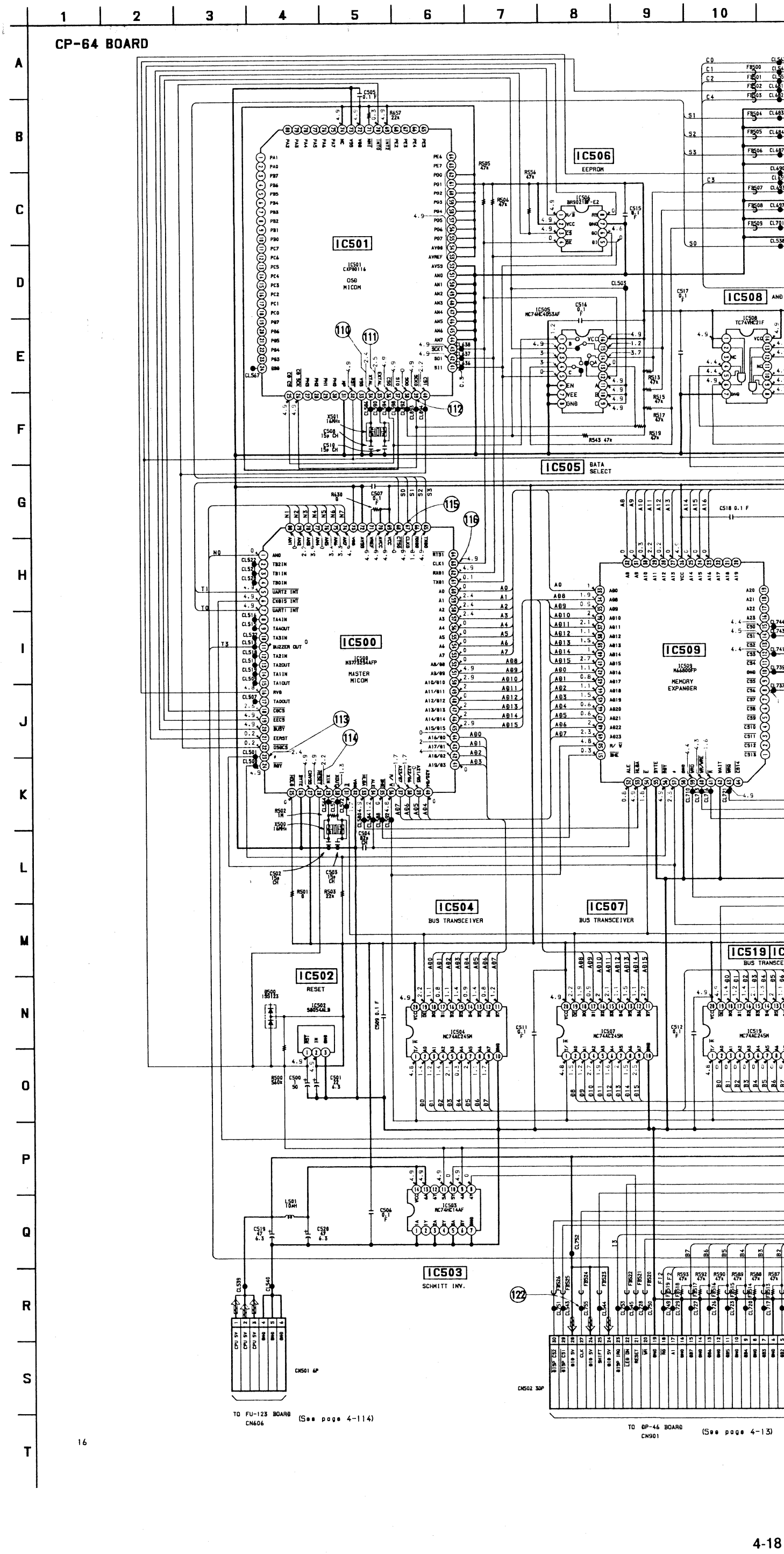


(121) IC518 (75) 1V/0.05µs



(122) IC518 (44) 1V/0.1µs





MASTER CPU

CN500 21P

TO
8V-19 BOARD
CN701

(See page 4-111)

IC508 AND GATE

IC521
IC522
IC523
IC524
GATE

Q501
POWER
SWITCH

Q500
POWER
FAIL
DETECT

IC600
UART

IC601
UART
SELECT

IC602
UART

IC513
RAM

IC517
ADDRESS
DECODER

IC516
OR/GATE

IC515
DELAY

IC518
CPO/PTC/
PIU/ICU

IC512
RAM

IC514
INV.

IC519 IC520
BUS TRANSCEIVER

IC511
CHIP
SELECT

IC510
ROM

CN503 28P

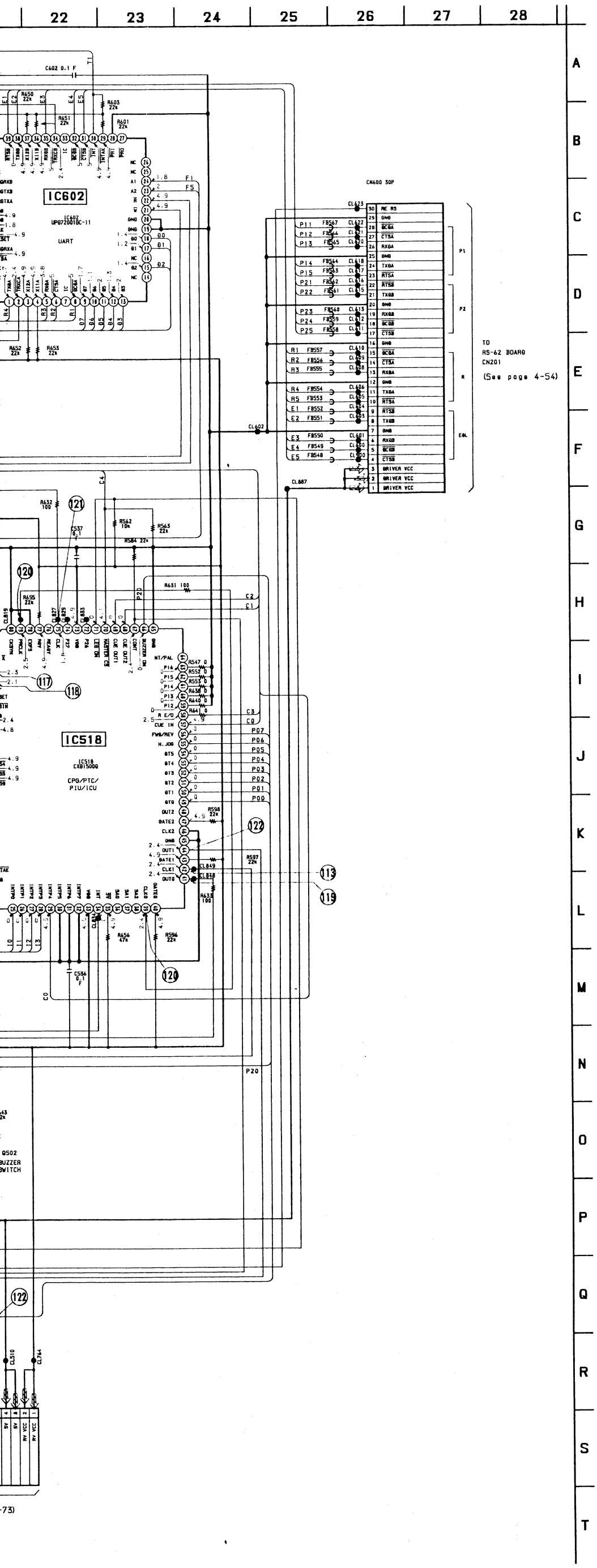
TO KS-15 BOARD
CN102

(See page 4-73)

CN504 28P

TO KS-15 BOARD
CN101

(See page 4-73)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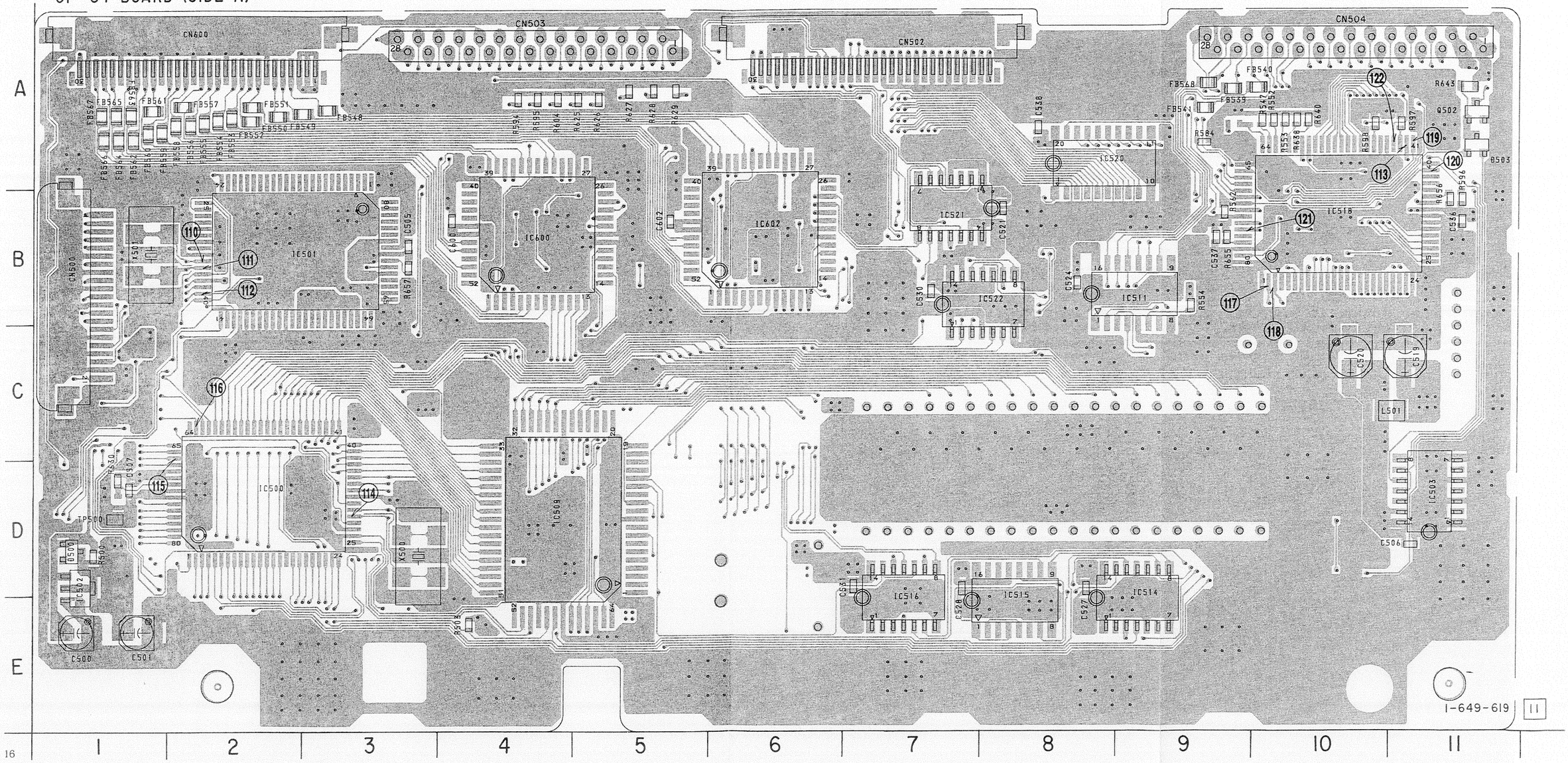
O
P
Q
R
S
T
IC602
UART
IC602
UPD720016C-11
IC518
CPG/PTC/
PIU/ICU
IC518
CXD1500Q
CN600 30P
TO
RS-62 BOARD
CN201
(See page 4-54)
C602 0.1 F
R650 22k
R651 22k
R603 22k
R601 22k
R652 22k
R653 22k
R632 100
R562 10k
R563 22k
R584 22k
C537 0.1 F
R631 100
R655 22k
R547 0
R552 0
R553 0
R638 0
R640 0
R644 0
R598 22k
R597 22k
R633 100
R654 47k
R596 22k
C556 0.1 F
CL602
CL887
CL510
CL764
P20
C0
C1
C2
C3
P1
P2
P00
P01
P02
P03
P04
P05
P06
P07
EOL
Q502
BUZZER
SWITCH
(73)

CP-64 (MASTER CPU) PRINTED WIRING BOARD

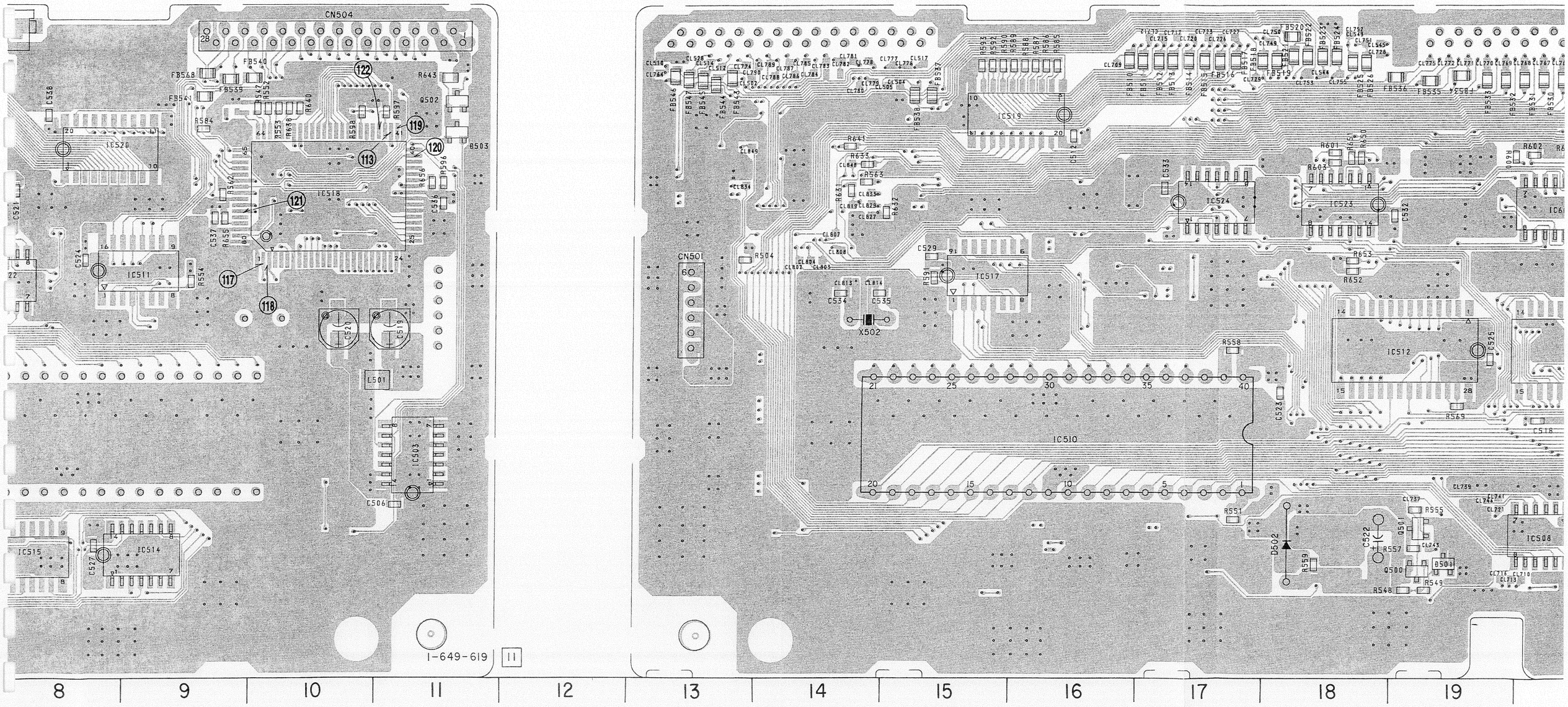
– Ref No. CP-64 BOARD : 2,000 Seriese –

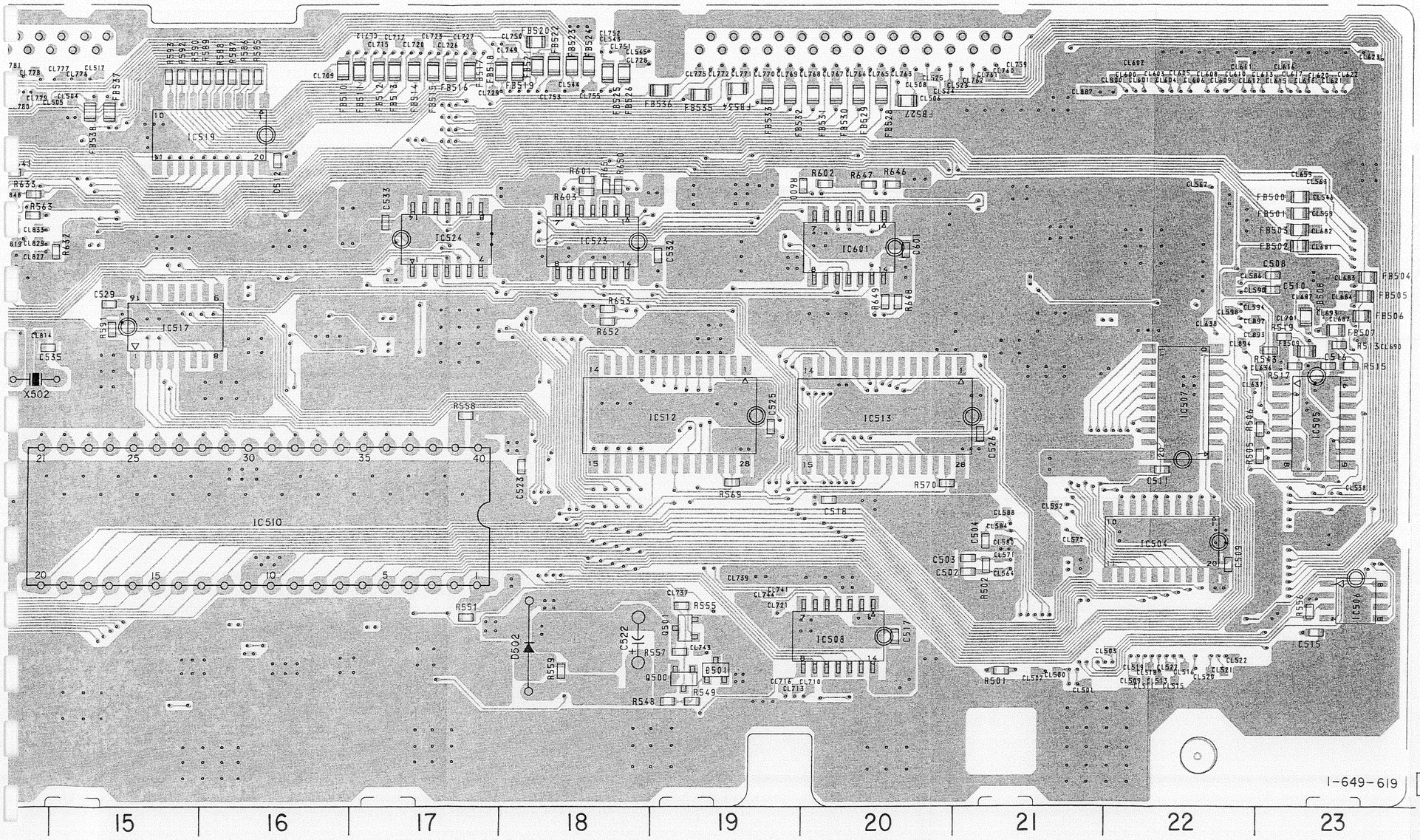
CP-64 BOARD (SIDE A)



VE-V13317 / Druck 27

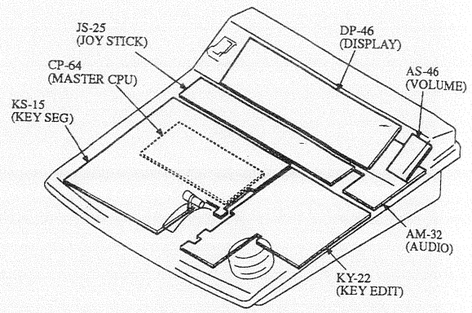
CP-64 BOARD (SIDE B)





CP-64 BOARD

CN500	B-1
CN501	B-13
CN502	A-7
CN503	A-4
CN504	A-10
CN600	A-2
D500	D-1
D501	E-19
D502	D-18
D503	A-11
IC500	D-2
IC501	B-2
IC502	D-1
IC503	D-11
IC504	D-22
IC505	C-23
IC506	D-23
IC507	C-22
IC508	D-20
IC509	D-4
IC510	D-16
IC511	B-9
IC512	C-19
IC513	C-20
IC514	E-9
IC515	E-8
IC516	E-7
IC517	B-15
IC518	B-10
IC519	A-15
IC520	A-8
IC521	B-7
IC522	B-8
IC523	B-18
IC524	B-17
IC600	B-4
IC601	B-20
IC602	B-6
Q500	E-19
Q501	D-19
Q502	A-11

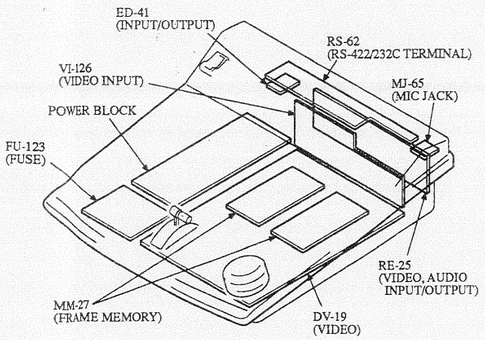


MM-27 (FRAME MEMORY) PRINTED WIRING BOARD

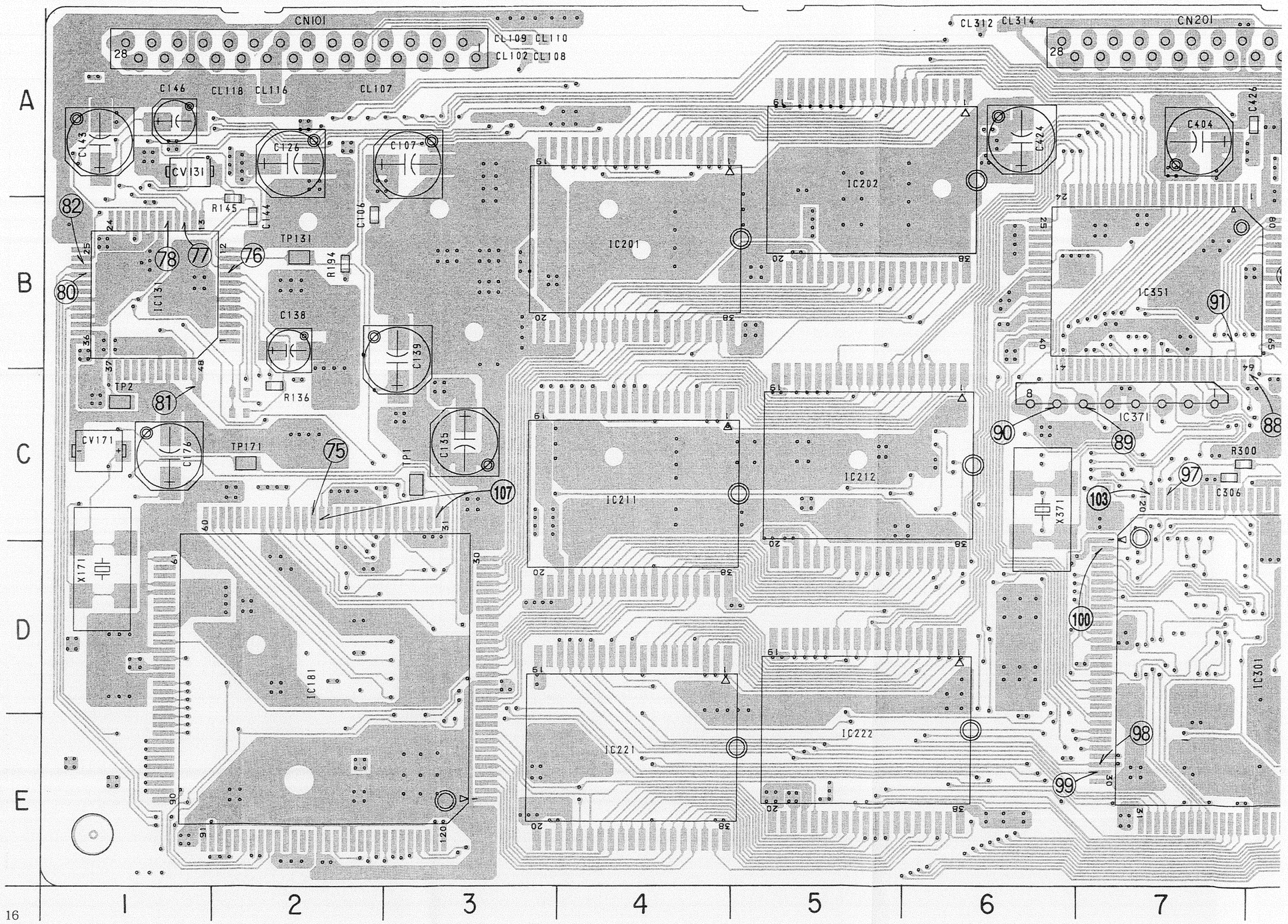
– Ref No. MM-27 BOARD : 5,000 Seriese –

MM-27 BOARD

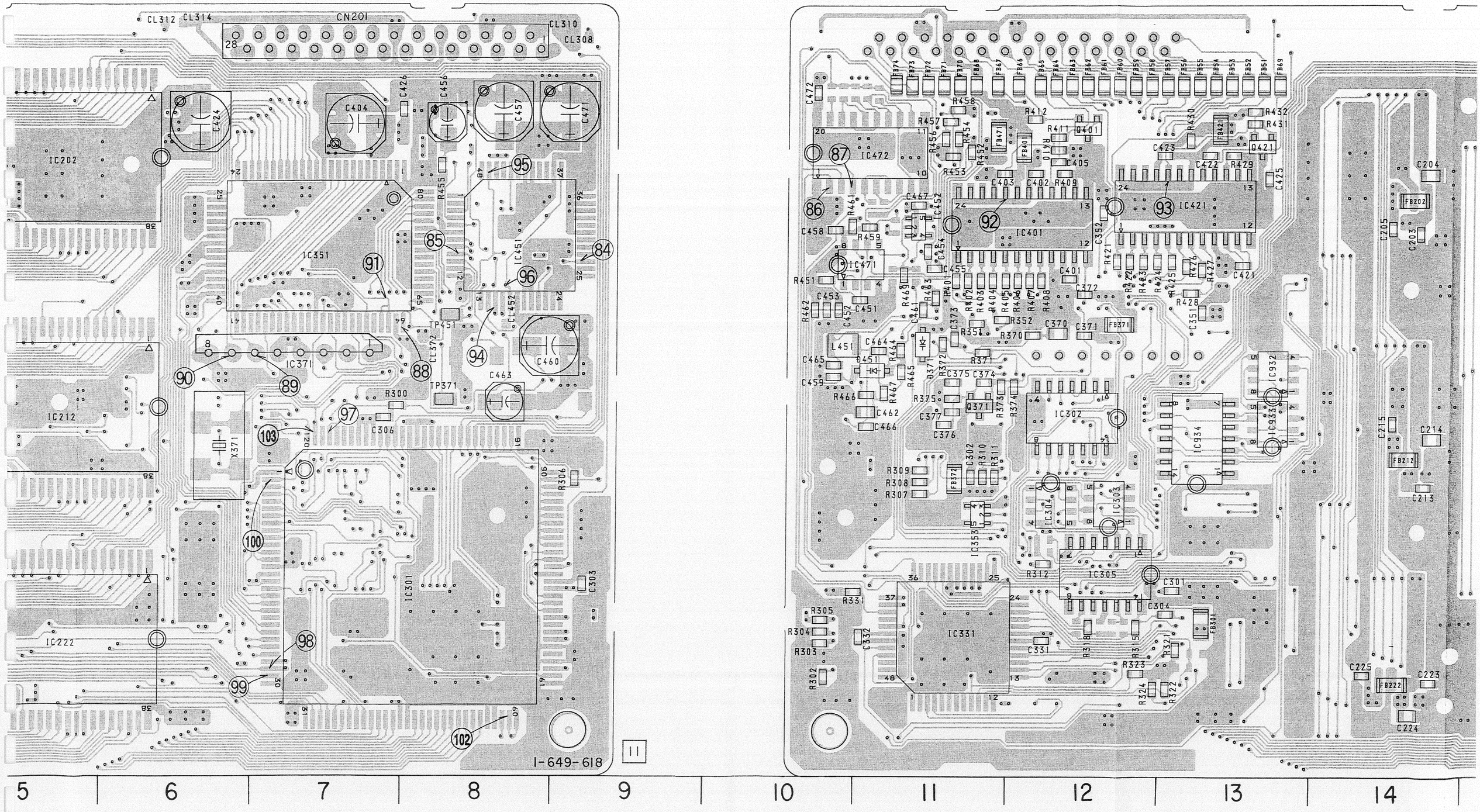
CN101	A-2
CN201	A-7
D131	A-18
D171	C-18
D181	E-16
D371	C-11
D451	C-11
IC101	B-16
IC121	B-17
IC131	B-11
IC132	C-16
IC151	C-17
IC152	D-17
IC153	D-17
IC154	E-17
IC181	D-2
IC201	B-4
IC202	A-5
IC211	C-4
IC212	C-5
IC221	E-4
IC222	E-5
IC301	D-8
IC302	C-12
IC303	D-12
IC304	D-12
IC305	D-12
IC331	E-11
IC351	B-7
IC353	D-11
IC371	C-7
IC401	B-12
IC421	B-13
IC451	B-8
IC452	B-11
IC471	B-11
IC472	A-11
IC932	C-13
IC933	C-13
IC934	C-13
Q101	A-16
Q131	B-18
Q171	C-18
Q371	C-11
Q401	A-12
Q421	A-13



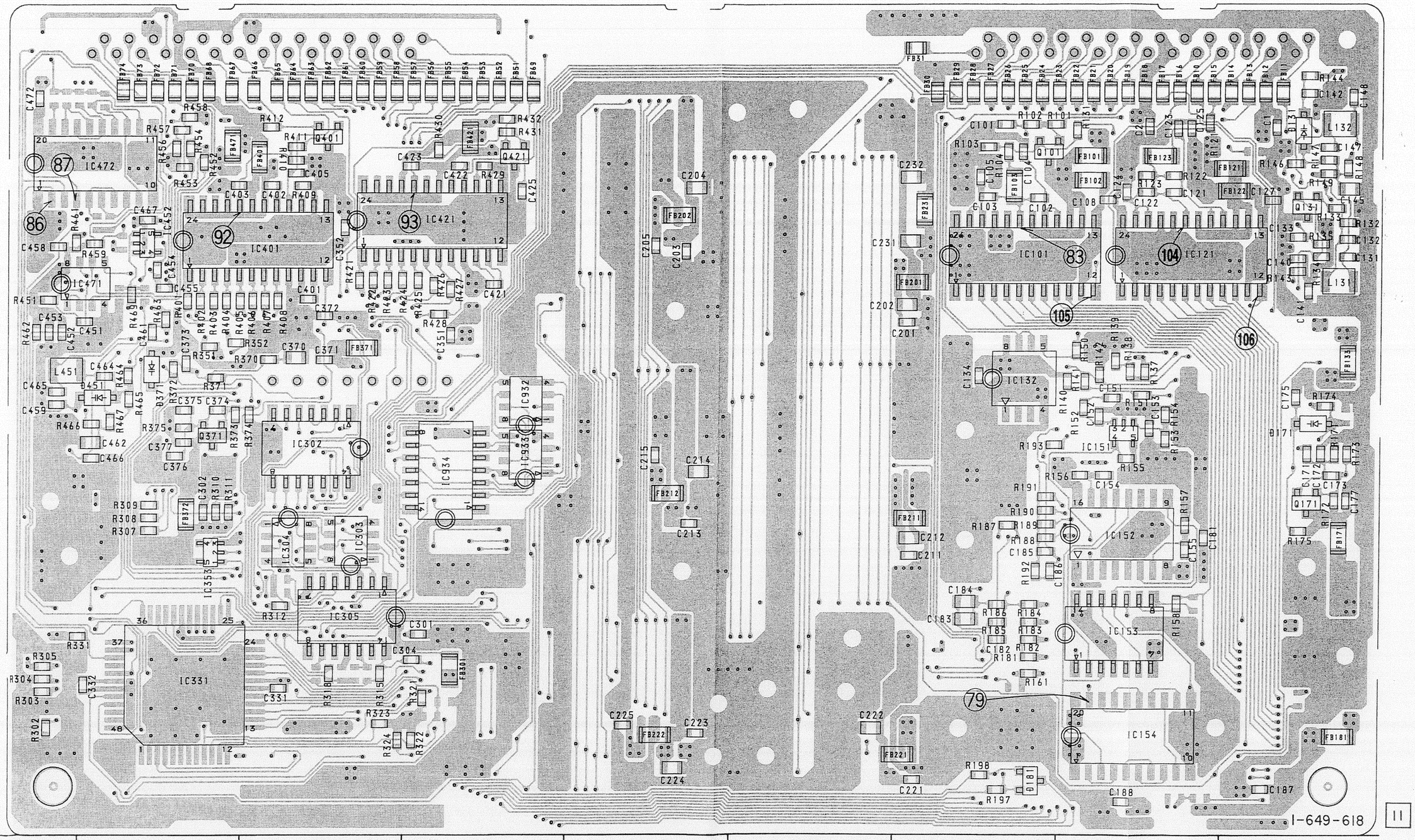
MM-27 BOARD (SIDE A)



MM-27 BOARD (SIDE B)

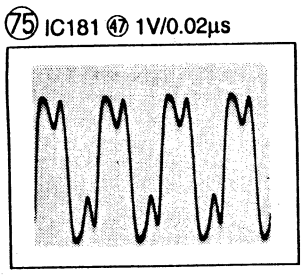


MM-27 BOARD (SIDE B)

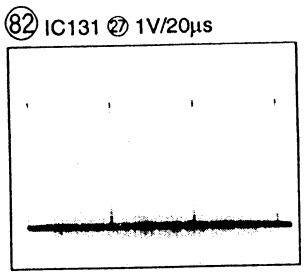


MM-27 board

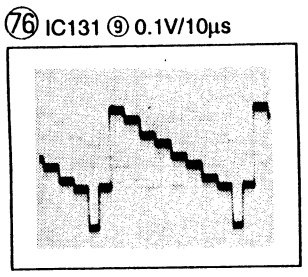
(75) IC181 (47) 1V/0.02µs



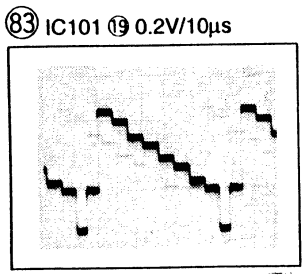
(82) IC131 (27) 1V/20µs



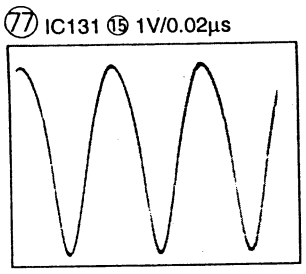
(76) IC131 (9) 0.1V/10µs



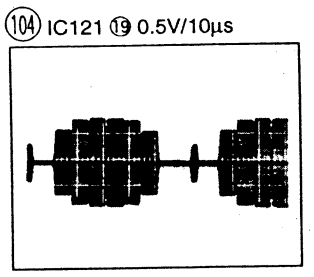
(83) IC101 (19) 0.2V/10µs



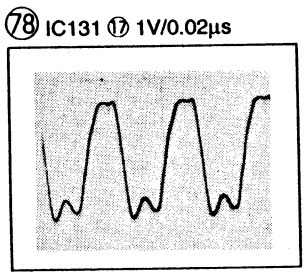
(77) IC131 (15) 1V/0.02µs



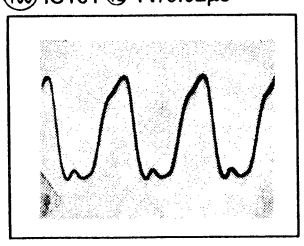
(104) IC121 (19) 0.5V/10µs



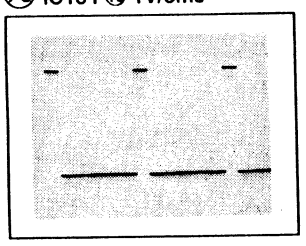
(78) IC131 (17) 1V/0.02µs



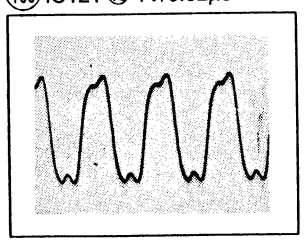
(105) IC101 (12) 1V/0.02µs



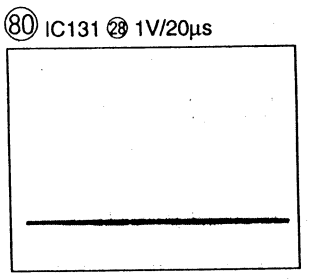
(79) IC154 (19) 1V/5ms



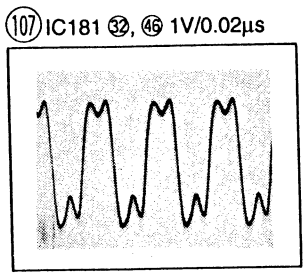
(106) IC121 (12) 1V/0.02µs



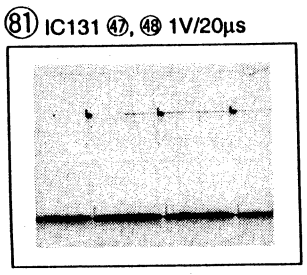
(80) IC131 (28) 1V/20µs



(107) IC181 (32), (46) 1V/0.02µs



(81) IC131 (47), (48) 1V/20µs



- **SIGNAL PATH (ANALOG)**

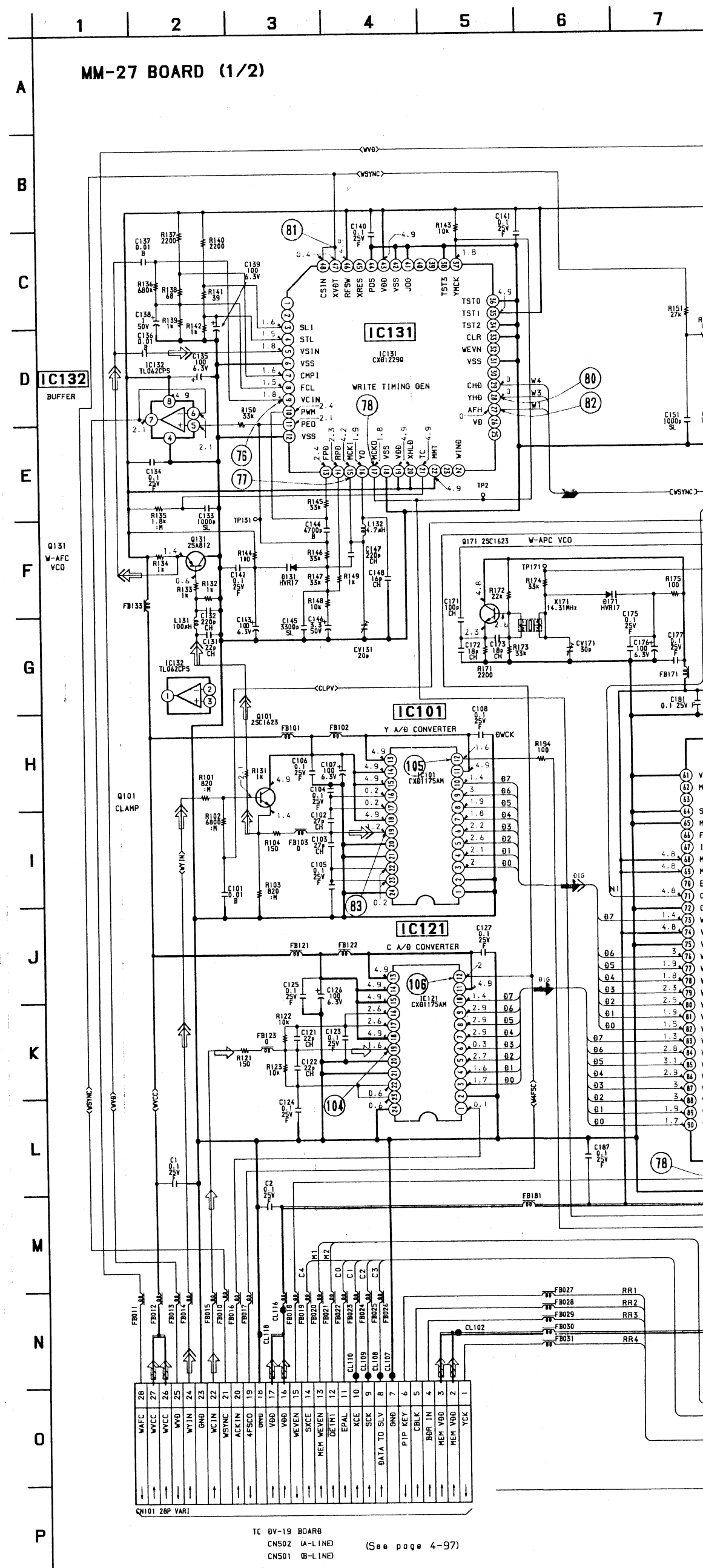
VIDEO SIGNAL			AUDIO SIGNAL
CHROMA	Y	Y/CHROMA	
⇨	⇨⇨		

- **SIGNAL PATH (DIGITAL)**

	VIDEO SIGNAL			VIDEO CONTROLL	AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA		
WRITE	DIG ➡	DIG ➡➡		⇨	
READ	DIG ⇨	DIG ⇨⇨		➡	

MM-27 (1/2) (FRAME MEMORY (1/2)) SCHEMATIC DIAGRAM

– Ref No. MM-27 BOARD : 5,000 Seriese –



7 8 9 10 11 12 13 14 15 16 17 18 19 20

W-V SYNC SEP.

IC151 CLAMP

IC152 M.M

IC153 LATCH

IC154 LATCH

IC154 TC74HC374AF

IC151 NJM2406F

IC152 SN74LS221NS

IC153 TC74HC74AF

W-V.SYNC SEP

IC181

IC181 CXA1226Q

DIGITAL CHROMA DECODER

DIGITAL NOISE REDUCTION

FIELD #1

IC201 CXK1206M RAM

IC211 CXK1206M RAM

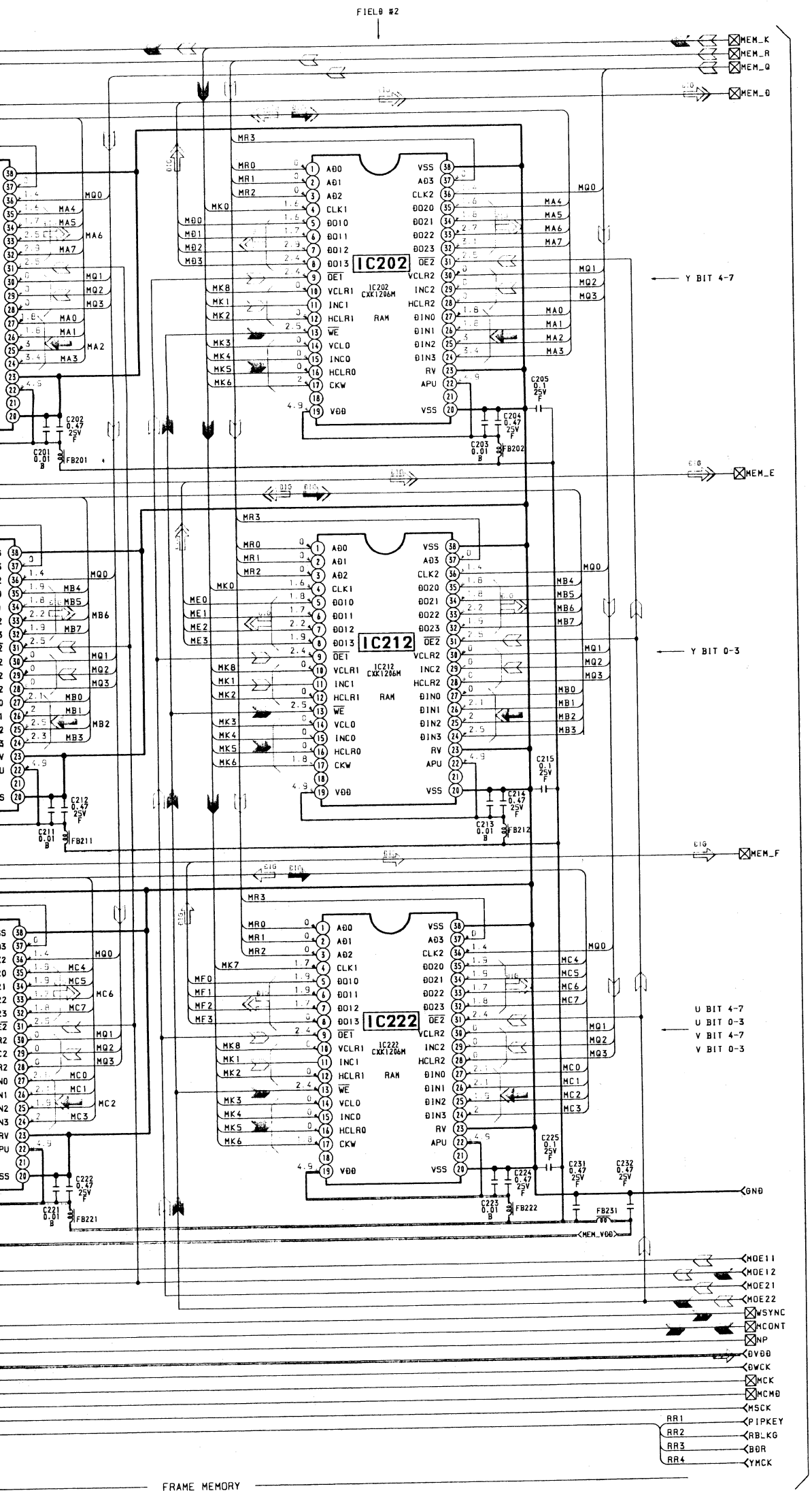
IC221 CXK1206M RAM

WRITE PROCESS

FRAME MEMORY

18 | 19 | 20 | 21 | 22 | 23 | 24 | 25

A B C D E F G H I J K L M N O P



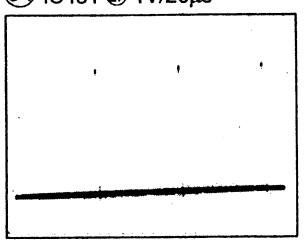
FRAME MEMORY (1/2)

MM-27 (2/2) (FRAME MEMORY (2/2)) SCHEMATIC DIAGRAM

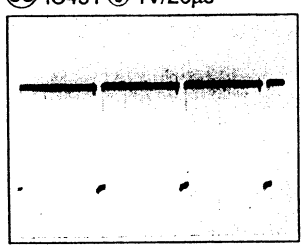
• See page 4-26 for PRINT

– Ref No. MM-27 BOARD : 5,000 Seriese –

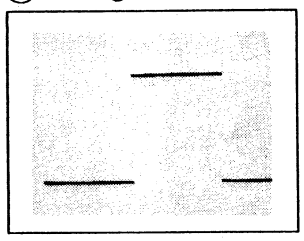
(84) IC451 (27) 1V/20µs



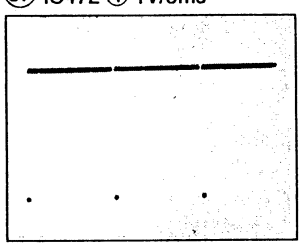
(85) IC451 (9) 1V/20µs



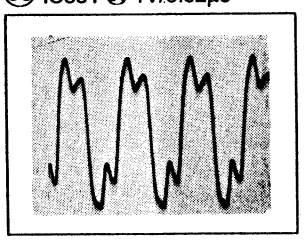
(86) IC472 (2) 1V/5ms



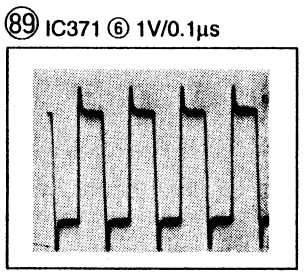
(87) IC472 (4) 1V/5ms



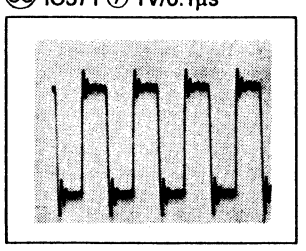
(88) IC351 (64) 1V/0.02µs



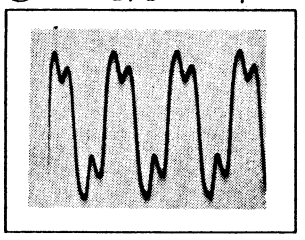
(89) IC371 (6) 1V/0.1µs



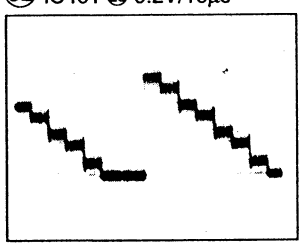
(90) IC371 (7) 1V/0.1µs



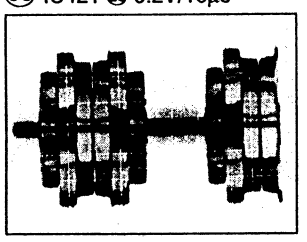
(91) IC351 (61), (62) 1V/0.02µs



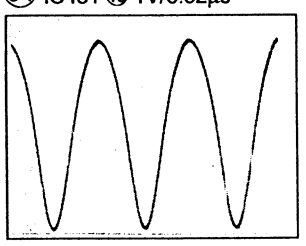
(92) IC401 (20) 0.2V/10µs



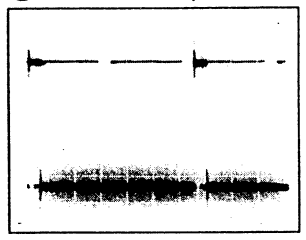
(93) IC421 (20) 0.2V/10µs



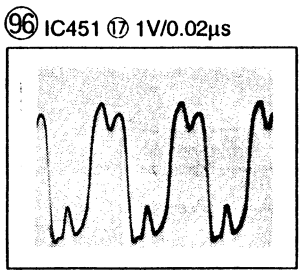
(94) IC451 (15) 1V/0.02µs



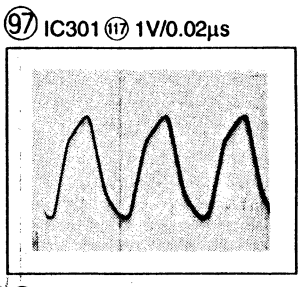
(95) IC451 (47) 1V/10µs



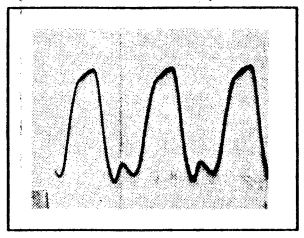
(96) IC451 (17) 1V/0.02µs



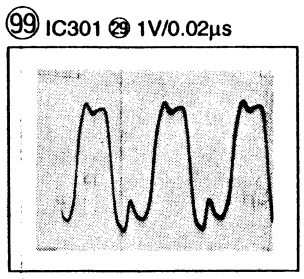
(97) IC301 (117) 1V/0.02µs



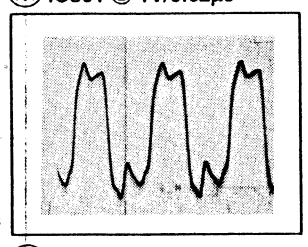
(98) IC301 (28) 1V/0.02µs



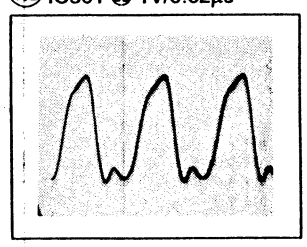
(99) IC301 (29) 1V/0.02µs



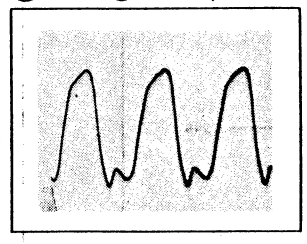
(100) IC301 (2) 1V/0.02µs

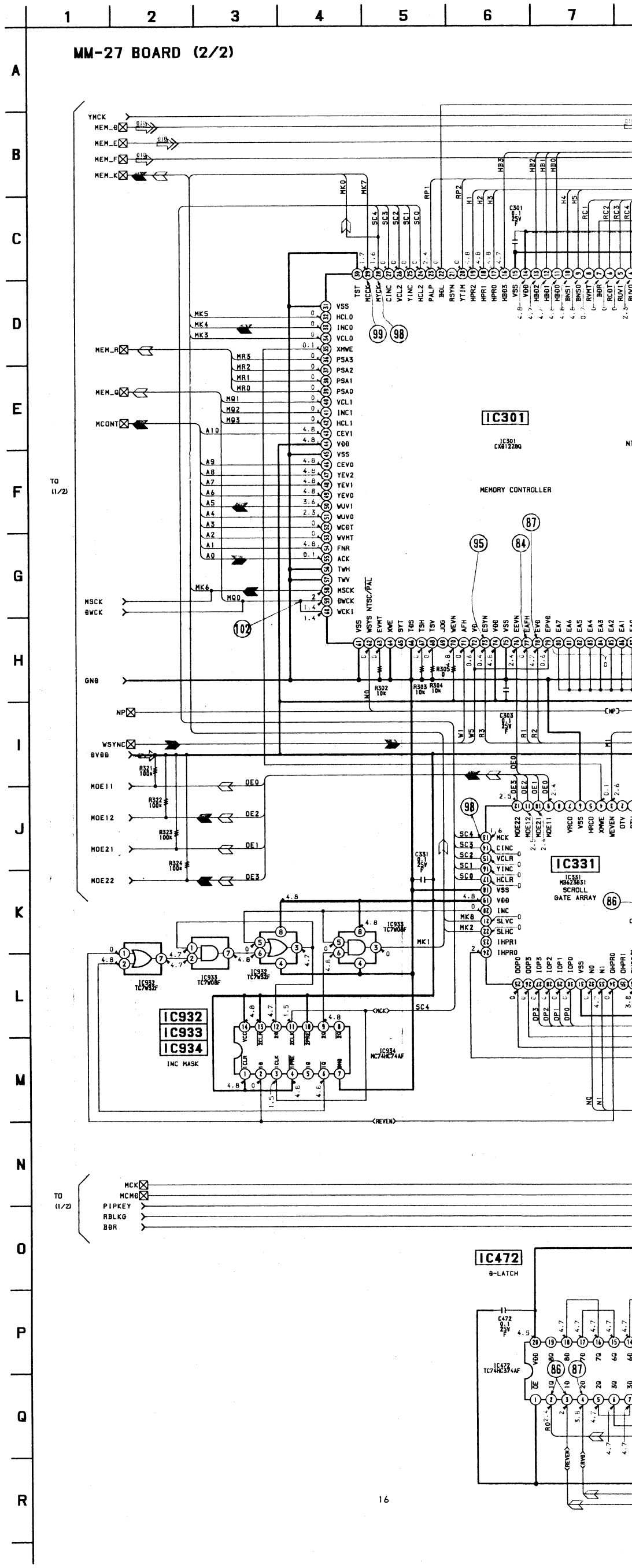


(102) IC301 (59) 1V/0.02µs



(103) IC301 (119) 1V/0.02µs





• **SIGNAL PATH (ANALOG)**

VIDEO SIGNAL			AUDIO SIGNAL
CHROMA	Y	Y/CHROMA	
⇨	⇨		

• **SIGNAL PATH (DIGITAL)**

	VIDEO SIGNAL			VIDEO CONTROLL	AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA		
WRITE				⇨	
READ	DIG ⇨	DIG ⇨		■	

7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21

IC401
Y D/A CONVERTER

IC421
C D/A CONVERTER

IC351
IC351
CXD1227Q
DIGITAL CHROMA ENCODER
SPECIAL EFFECTS GEN

IC371
PHASE COMP.

R-APC VCO

IC331
M64Z931
SCROLL
GATE ARRAY

IC302
IC303
IC304
MUTE/PULSE GEN.

IC305

IC353
GATE

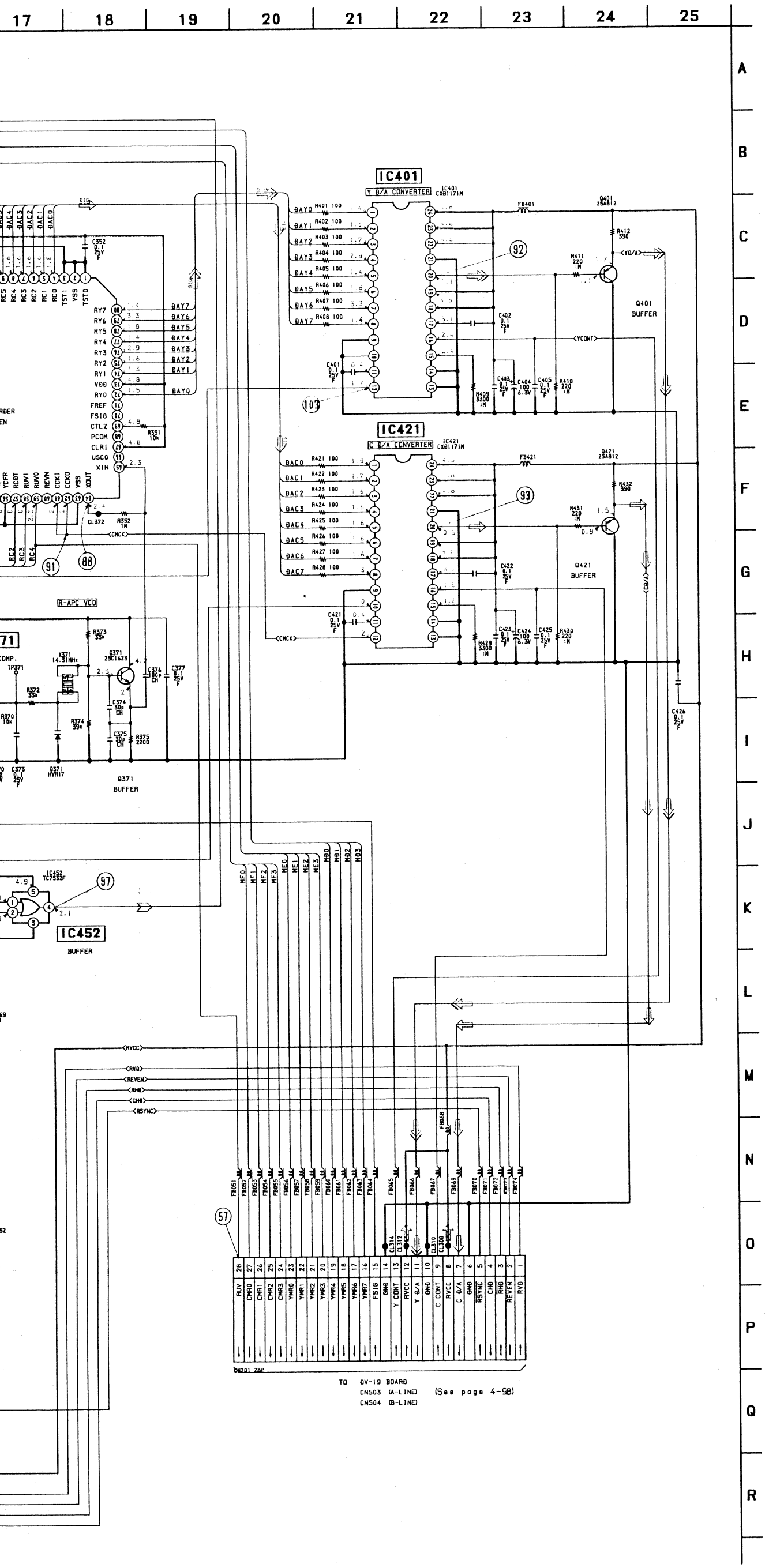
IC452
BUFFER

Q371
BUFFER

IC451
IC451
CXD1229Q
REAG TIMING GEN

IC471
INV.

TO 8V-19 BOARD
CN503 (A-LINE)
CN504 (B-LINE)


17
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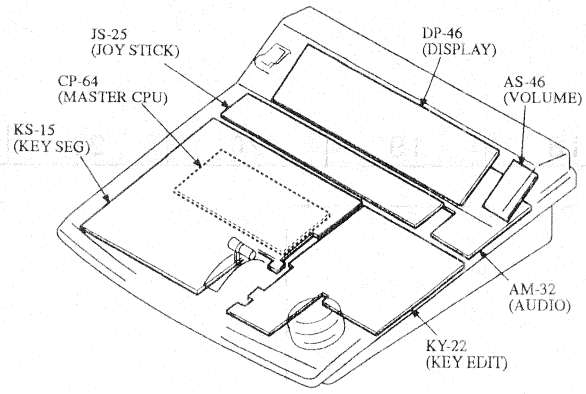
P
Q
R
IC401
Y D/A CONVERTER
IC401 CXD1171M
IC421
C D/A CONVERTER
IC421 CXD1171M
IC452
IC452 TC7S32F
BUFFER
Q401 BUFFER
Q421 BUFFER
Q371 BUFFER
R-APC VCO
92
93
97
103
91
88
57
(CMCK)
(YCONT)
(YD/A)
(CD/A)
(RVCC)
(RV0)
(REVEN)
(RH0)
(CH0)
(RSYNC)
TO 0V-19 BOARD
CN503 (A-LINE)
CN504 (B-LINE)
(See page 4-98)

JS-25 BOARD

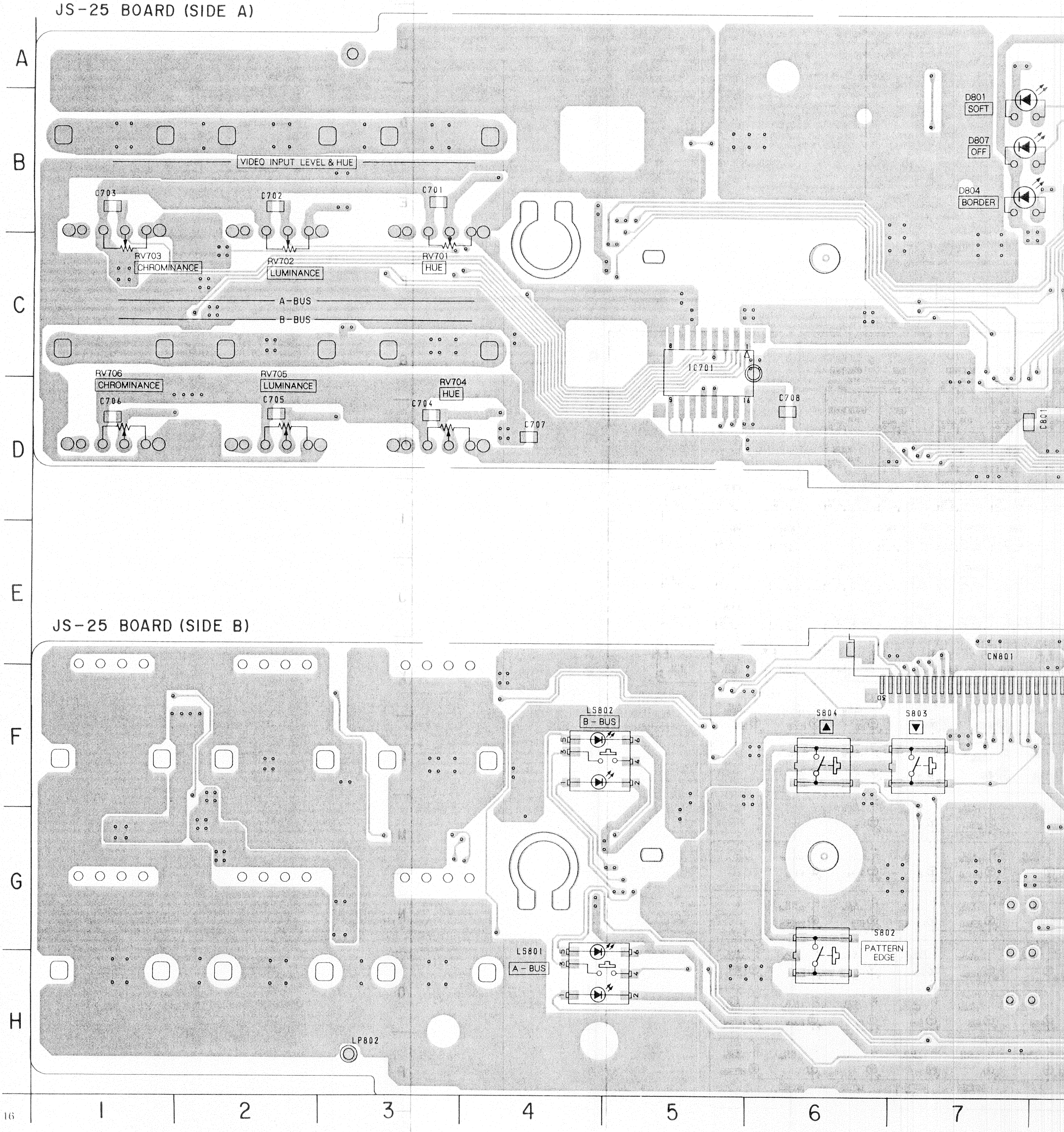
CN801	E-7
D801	B-7
D803	A-10
D804	B-7
D807	B-7
D809	A-13
D810	A-18
IC701	C-5
IC801	F-15



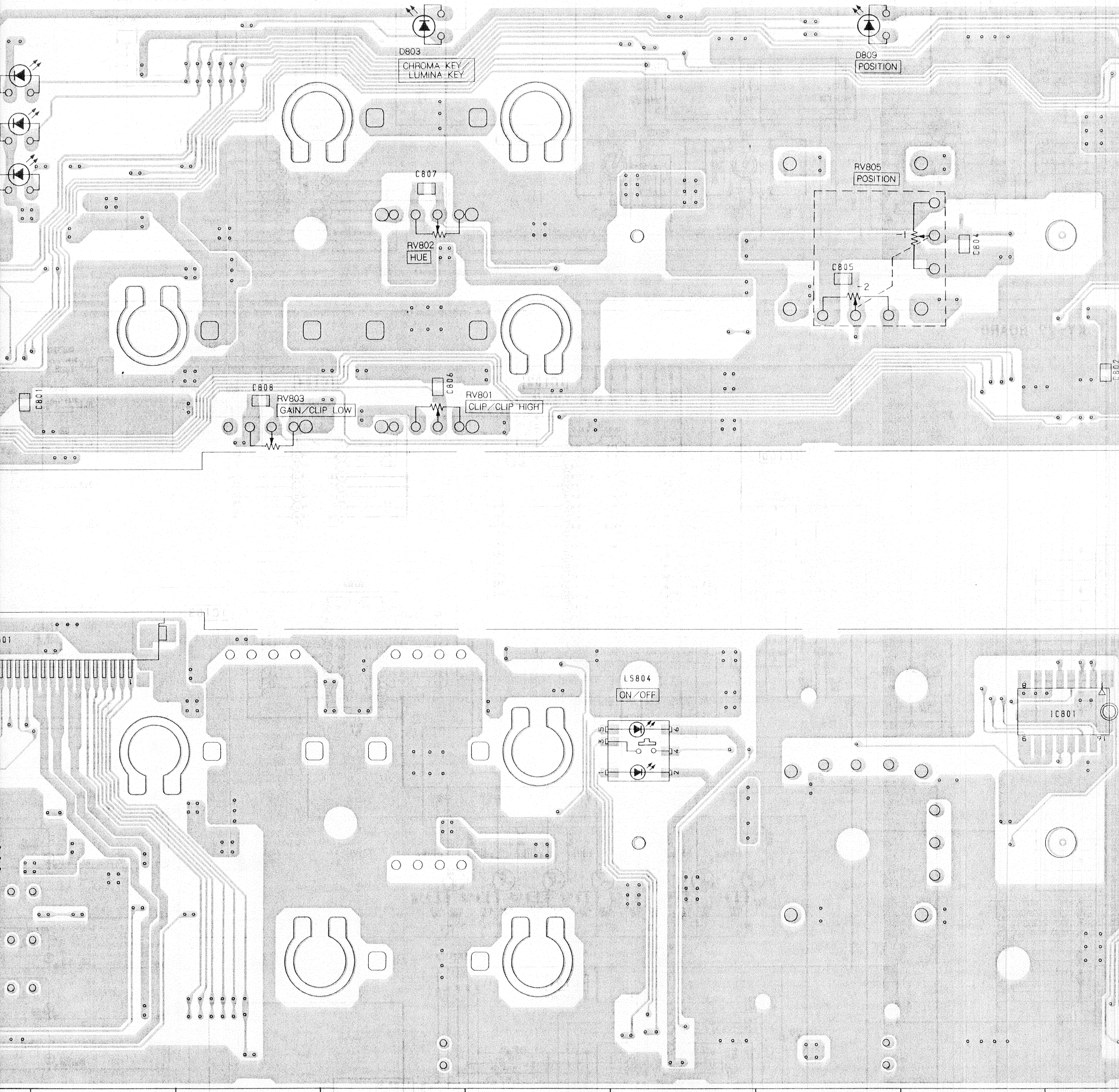
JS-25 (JOY STICK) PRINTED WIRING BOARD

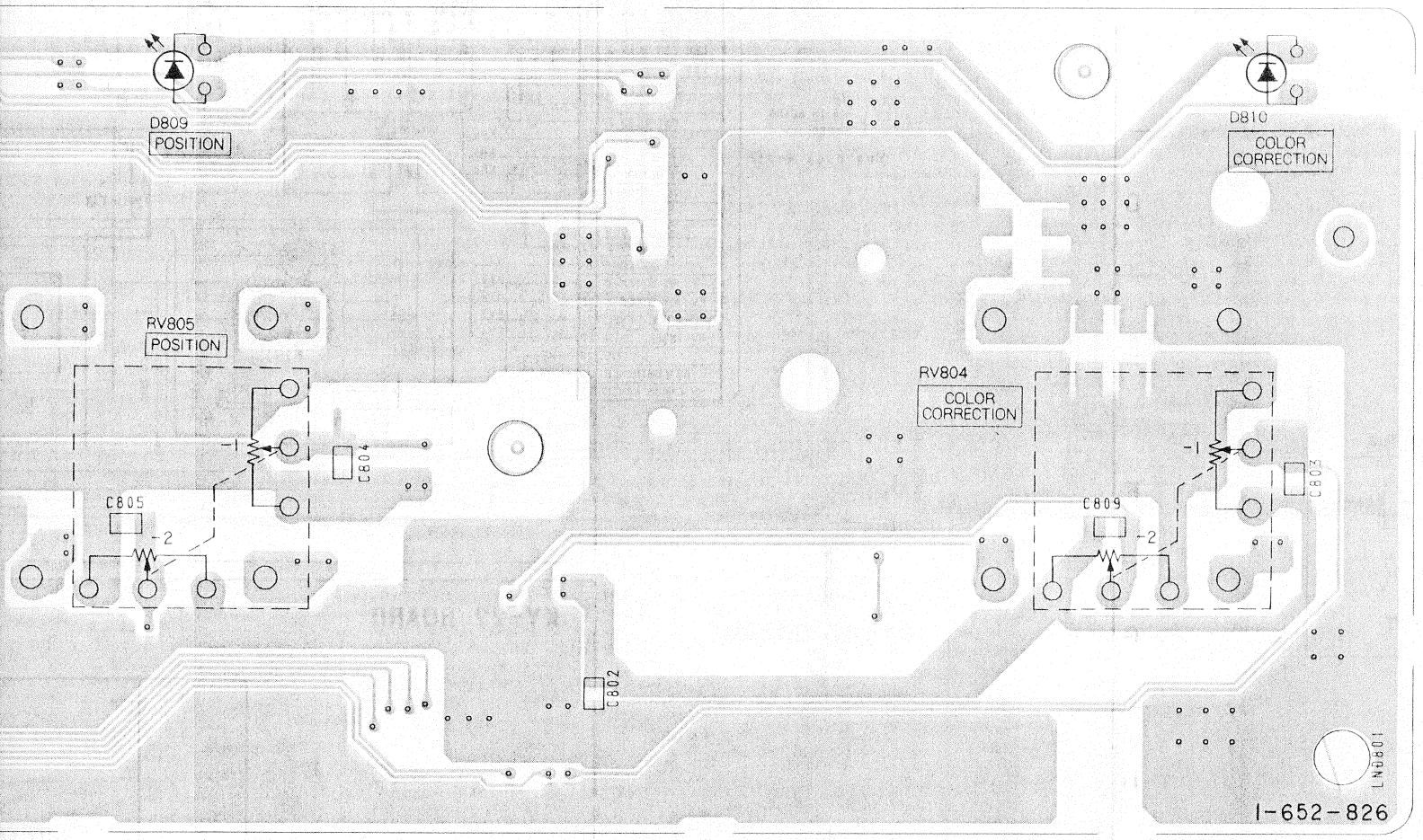
– Ref No. JS-25 BOARD : 3,000 Seriese –

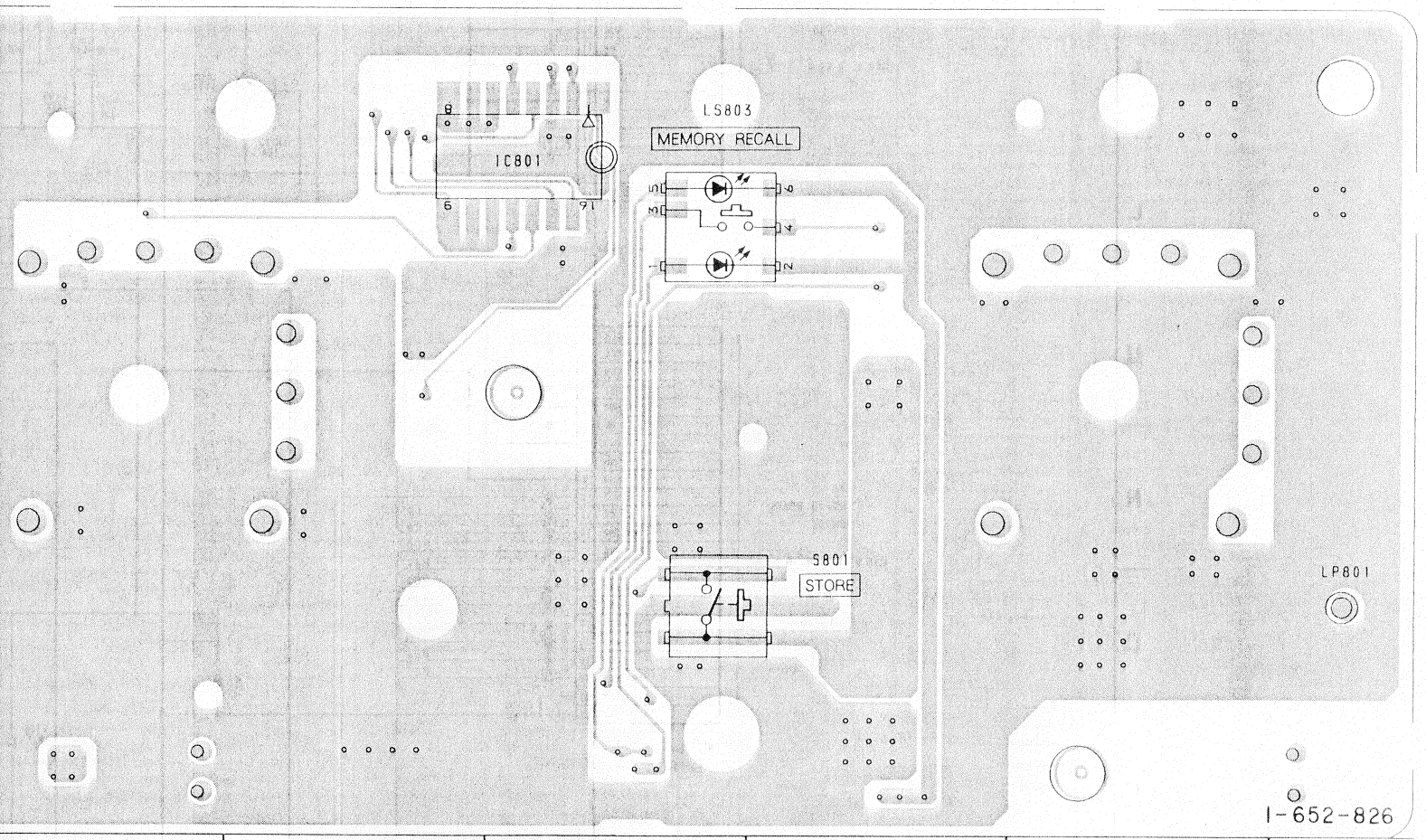
JS-25 BOARD (SIDE A)



JS-25 BOARD (SIDE B)


D803
CHROMA KEY/
LUMINA KEY
D809
POSITION
C807
RV805
POSITION
RV802
HUE
C804
C805
C801
C808
RV803
GAIN/CLIP LOW
C806
RV801
CLIP/CLIP HIGH
C802
LS804
ON/OFF
IC801
8
9
10
11
12
13
14





13 14 15 16 17 18

JOY STICK

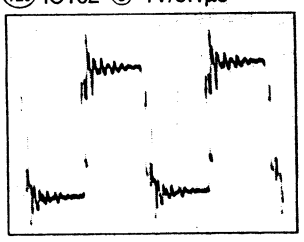
JS-25 (JOY STICK) /KY-22 (KEY EDIT) SCHEMATIC DIAGRAM

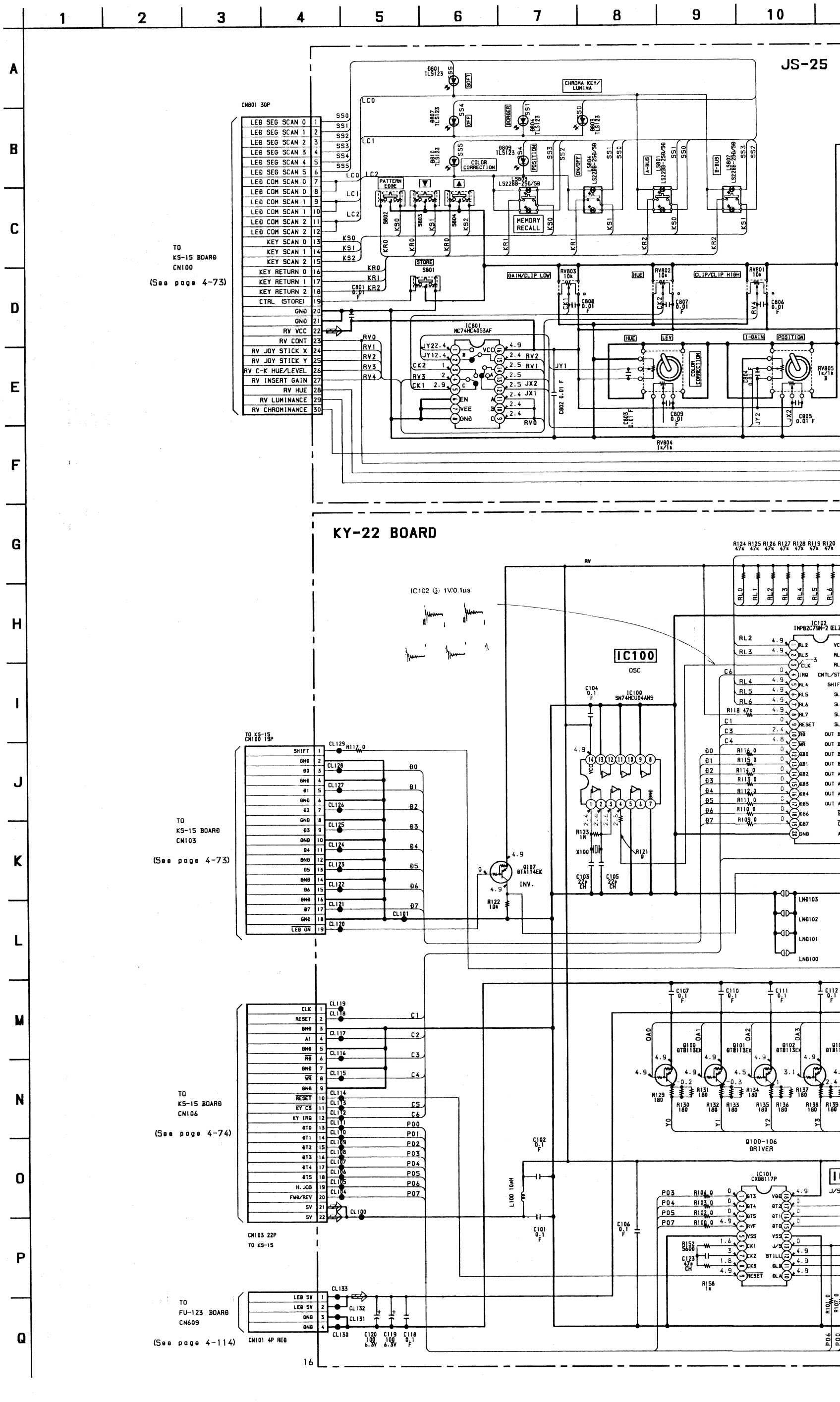
• See page 4-39 for JS-25 PRINTED WIRING BOARD

– Ref No. JS-25 BOARD : 3,000/KY-22 BOARD : 8,000 Seriese –

KY-22 board

(126) IC102 ③ 1V/0.1µs





JS-25 BOARD

VIDEO INPUT LEVEL & HUE

RV701 10k B HUE
LUMINANCE
CHROMINANCE
RV702 10k
RV703 10k
C701 0.01 F
C702 0.01 F
C703 0.01 F
— A-BUS
RV704 10k
HUE
LUMINANCE
CHROMINANCE
RV705 10k
RV706 10k
C704 0.01 F
C705 0.01 F
C706 0.01 F
— B-BUS
C707 0.01 F
C708 0.01 F
IC701
SELECT SWITCH.
POSITION
LN0801
RV805 1k/1k B
C806 0.01 F
C805 0.01 F
JX2

IC102
KEY/LED CONTROLER
IC102 TMP82C79M-2 (ELZ)
C113 0.1 F
RL1
RL0
SL2
SL1
SL0
OA0
OA1
OA2
OA3
OA4
OA5
OA6
C5
C2

IC104
DECODER
IC104 SN74HC138ANS
C117 0.1 F
REC S111
SHIFT S103
S0
S1
S2
S3
S4
S5
S6

IC103
DRIVER
IC103 TB62383P
E0
E1
E2
E3
E4
E5
E6
E7

LN0103
LN0102
LN0101
LN0100
C111 0.1 F
C112 0.1 F
C114 0.1 F
C115 0.1 F
C100 0.1 F
C116 0.1 F
Q102 BTB113EK
Q103 BTB113EK
Q104 BTB113EK
Q105 BTB113EK
Q106 BTB113EK
R135 180
R136 180
R137 180
R138 180
R139 180
R140 180
R141 180
R142 180
R143 180
R144 180
R145 180
R146 180
R159 180
R160 180
R161 180

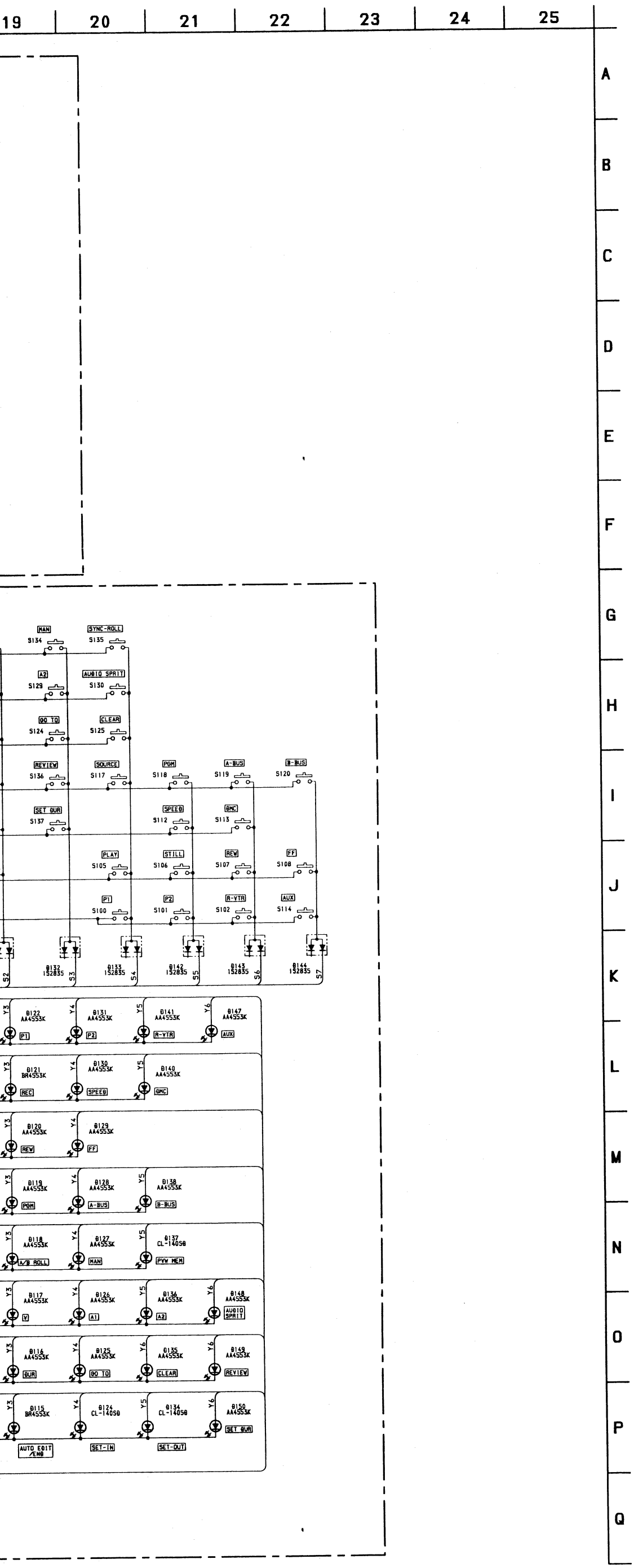
IC101
J/S ENCODER
R150 10k
R149 10k
R148 10k
R147 10k
R101 0
R102 0
R103 0
R104 0
R105 0
C122 180p CH
C121 180p CH
C108 180p CH
C109 180p CH
CL139 REG 5V
CL137 DIAL A
CL136 DIAL B
CL135 DIAL STILL
CL134 H.JOG
CL138 GND
TO J/S UNIT
CN102 6P

R151 22k
R157 22k
R153 1k
R154 1k
R155 1k
R156 1k
R126 47k
R127 47k
R128 47k
R119 47k
R120 47k
RL2
RL3
RL4
RL5
RL6

CUT EDIT S131
A-ROLL S132
A/B ROLL S133
MAN S134
SYNC-ROLL S135
ASMBL S126
V S127
A1 S128
A2 S129
AUDIO SPRIT S130
IN S121
OUT S122
DUR S123
GO TO S124
CLEAR S125
PREVIEW S115
AUTO EDIT /END S116
REVIEW S136
SOURCE S117
PGM S118
A-BUS S119
B-BUS S120
MARK IN S109
MARK OUT S110
SET DUR S137
SPEED S112
EMC S113
ALL STOP S104
PLAY S105
STILL S106
REV S107
FF S108
P1 S100
P2 S101
R-VTR S102
AUX S114

Q108 1S2835
Q114 1S2835
Q123 1S2835
Q132 1S2835
Q133 1S2835
Q142 1S2835
Q143 1S2835
Q144 1S2835

Q102 GL8EG22
Q122 AA4553K P1
Q131 AA4553K P2
Q141 AA4553K R-VTR
Q147 AA4553K AUX
Q101 GL8EG22
Q145 GL8HS22
Q121 BR4553K REC
Q130 AA4553K SPEED
Q140 AA4553K EMC
Q100 PG4553KY PLAY
Q146 AA4553K STILL
Q120 AA4553K REV
Q129 AA4553K FF
Q107 AA4553K SYNC-ROLL
Q113 AA4553K SOURCE
Q119 AA4553K PGM
Q128 AA4553K A-BUS
Q138 AA4553K B-BUS
Q112 AA4553K A-ROLL
Q118 AA4553K A/B ROLL
Q127 AA4553K MAN
Q137 CL-140S0 PVW MEM
Q105 AA4553K CUT EDIT
Q111 AA4553K ASMBL
Q117 AA4553K V
Q126 AA4553K A1
Q136 AA4553K A2
Q148 AA4553K AUDIO SPRIT
Q104 AA4553K IN
Q110 AA4553K OUT
Q116 AA4553K DUR
Q125 AA4553K GO TO
Q135 AA4553K CLEAR
Q149 AA4553K REVIEW
Q103 CL-140S0 PREVIEW
Q109 CL-140UR AUTO ASM
Q115 BR4553K AUTO EDIT /END
Q124 CL-140S0 SET-IN
Q134 CL-140S0 SET-OUT
Q150 AA4553K SET DUR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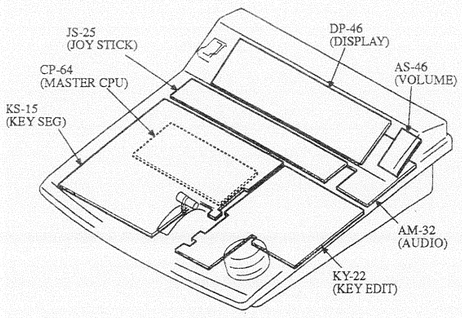
A
B
C
D
E
F
G
H
I
J
K
L
M
N
O
P
Q
MAN
S134
SYNC-ROLL
S135
A2
S129
AUDIO SPRIT
S130
GO TO
S124
CLEAR
S125
REVIEW
S136
SOURCE
S117
PGM
S118
A-BUS
S119
B-BUS
S120
SET DUR
S137
SPEED
S112
GMC
S113
PLAY
S105
STILL
S106
REW
S107
FF
S108
P1
S100
P2
S101
R-VTR
S102
AUX
S114
S2
S3
S4
S5
S6
S7
D132 152835
D133 152835
D142 152835
D143 152835
D144 152835
Y3
Y4
Y5
Y6
D122 AA4553K
P1
D131 AA4553K
P2
D141 AA4553K
R-VTR
D147 AA4553K
AUX
D121 BR4553K
REC
D130 AA4553K
SPEED
D140 AA4553K
GMC
D120 AA4553K
REW
D129 AA4553K
FF
D119 AA4553K
PGM
D128 AA4553K
A-BUS
D138 AA4553K
B-BUS
D118 AA4553K
A/B ROLL
D127 AA4553K
MAN
D137 CL-140S0
PVW MEM
D117 AA4553K
V
D126 AA4553K
A1
D136 AA4553K
A2
D148 AA4553K
AUDIO SPRIT
D116 AA4553K
DUR
D125 AA4553K
GO TO
D135 AA4553K
CLEAR
D149 AA4553K
REVIEW
D115 BR4553K
AUTO EDIT /ENB
D124 CL-140S0
SET-IN
D134 CL-140S0
SET-OUT
D150 AA4553K
SET DUR

KY-22 (KEY EDIT) PRINTED WIRING BOARD

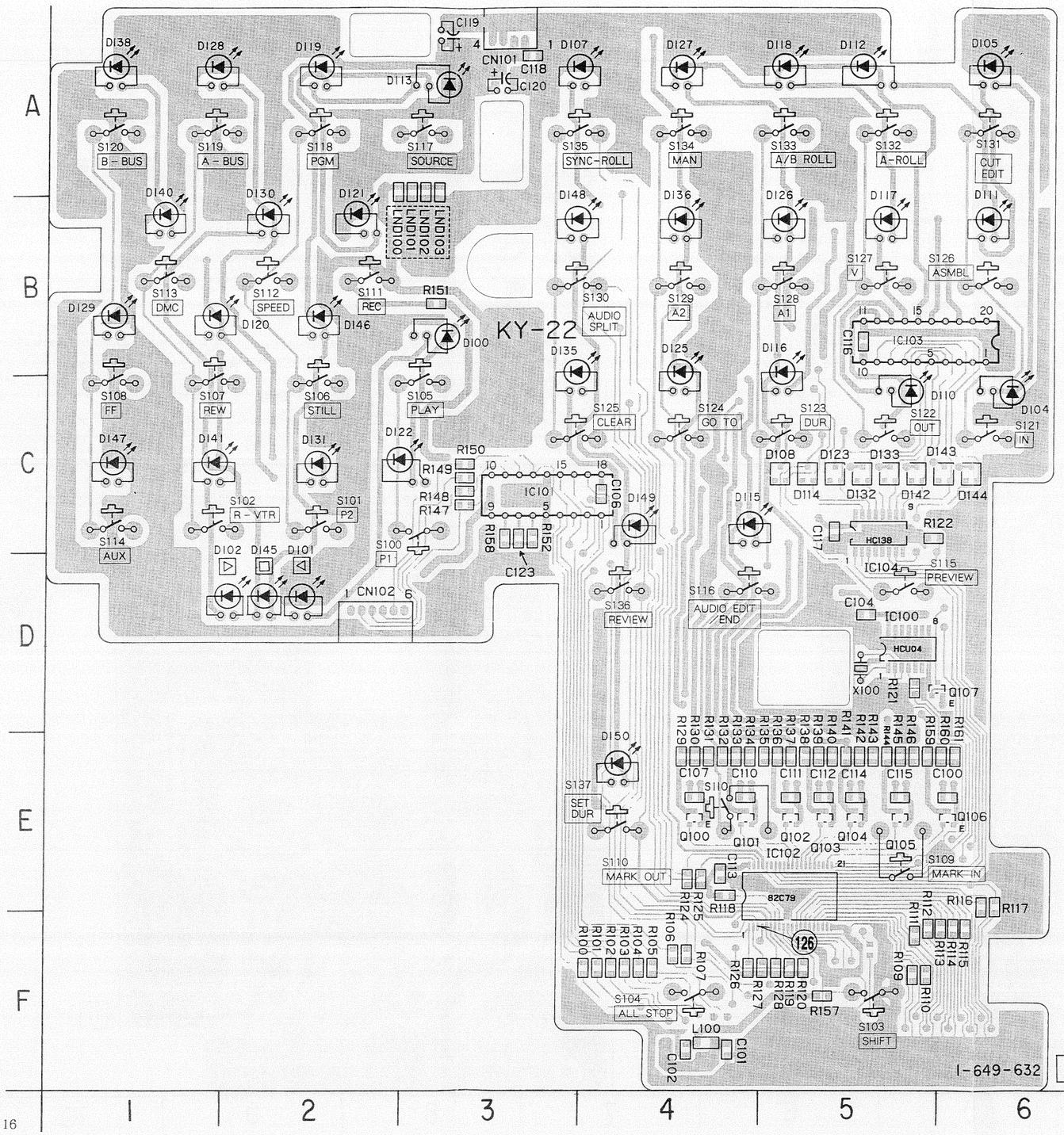
– Ref No. KY-22 BOARD : 8.000 Seriese –

KY-22 BOARD

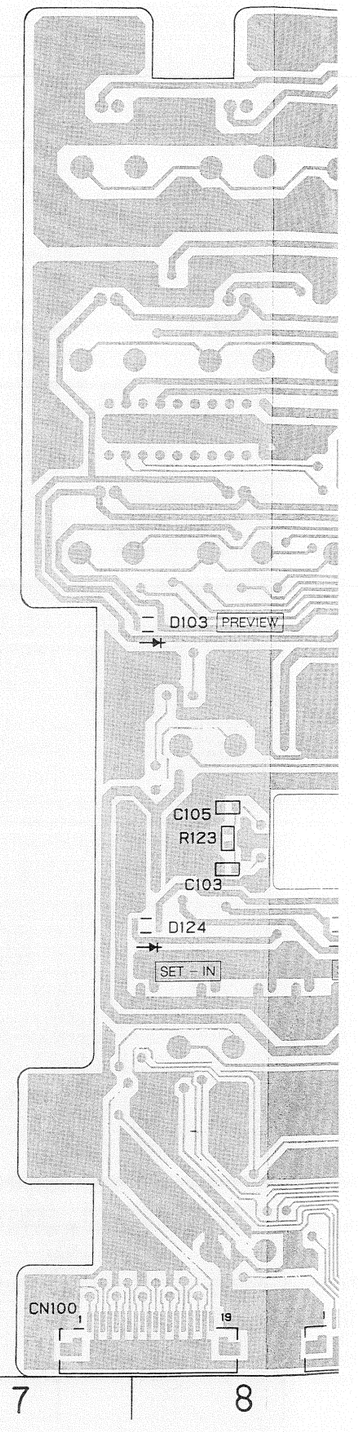
CN100	F-7	D130	B-2
CN101	A-3	D131	C-2
CN102	D-2	D132	C-5
CN103	F-9	D133	C-5
		D134	D-9
D100	B-3	D135	B-3
D101	D-2	D136	B-4
D102	D-2	D137	A-9
D103	C-8	D138	A-1
D104	C-6	D140	B-1
D105	A-6	D141	C-1
D107	A-3	D142	C-5
D108	C-5	D143	C-5
D109	C-9	D144	C-6
D110	C-5	D145	D-2
D111	B-6	D146	B-2
D112	A-5	D147	C-1
D113	A-2	D148	B-3
D114	C-5	D149	C-4
D115	C-4	D150	E-4
D116	B-5		
D117	B-5	IC100	D-5
D118	A-5	IC101	C-3
D119	A-2	IC102	E-5
D120	B-2	IC103	B-5
D121	B-2	IC104	C-5
D122	C-2		
D123	C-5	Q100	E-4
D124	D-8	Q101	E-4
D125	B-4	Q102	E-5
D126	B-5	Q103	E-5
D127	A-4	Q104	E-5
D128	A-1	Q105	E-5
D129	B-1	Q106	E-6
		Q107	D-5



KY-22 BOARD (SIDE B)



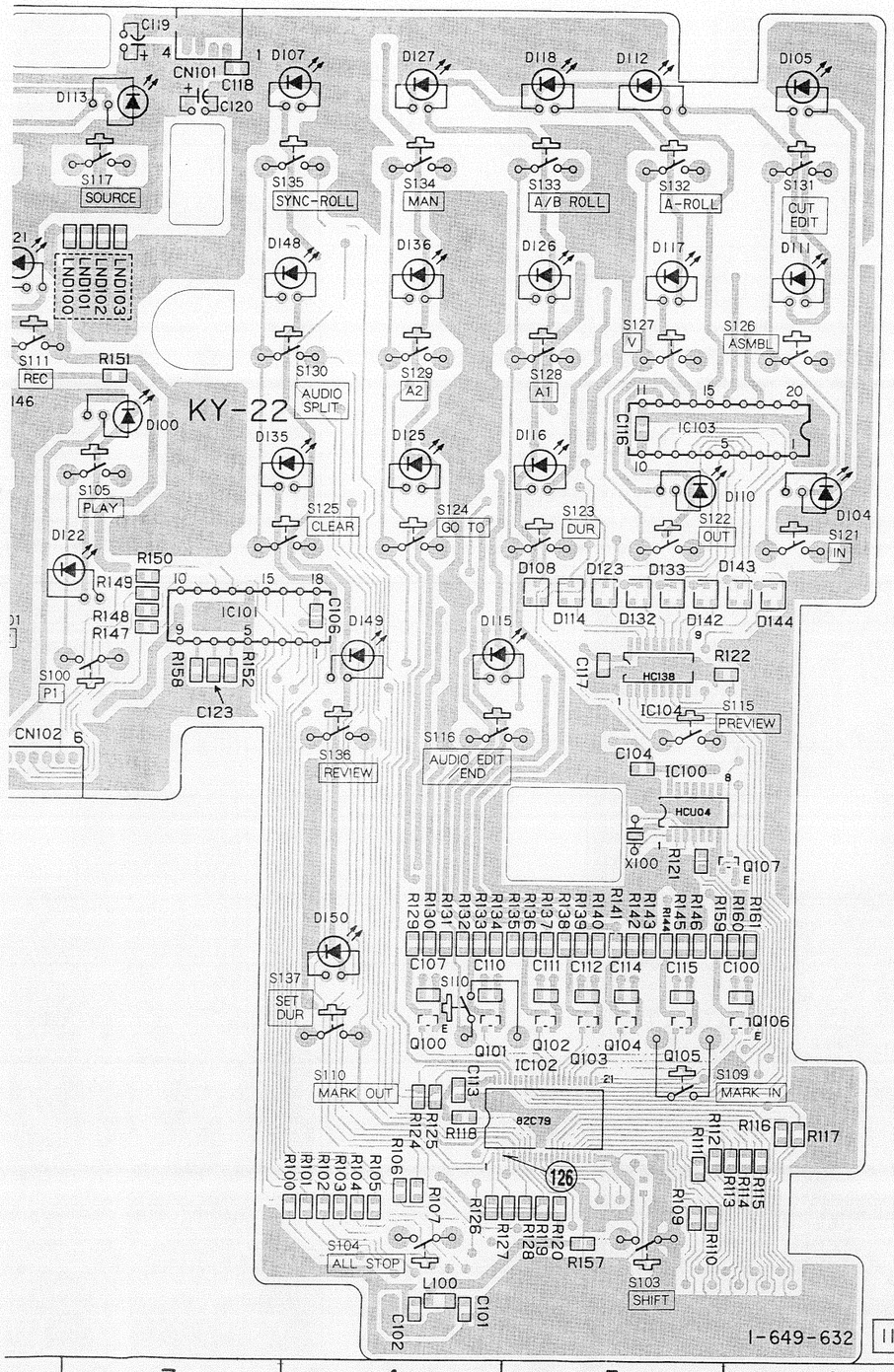
KY-22 BOARD (SIDE A

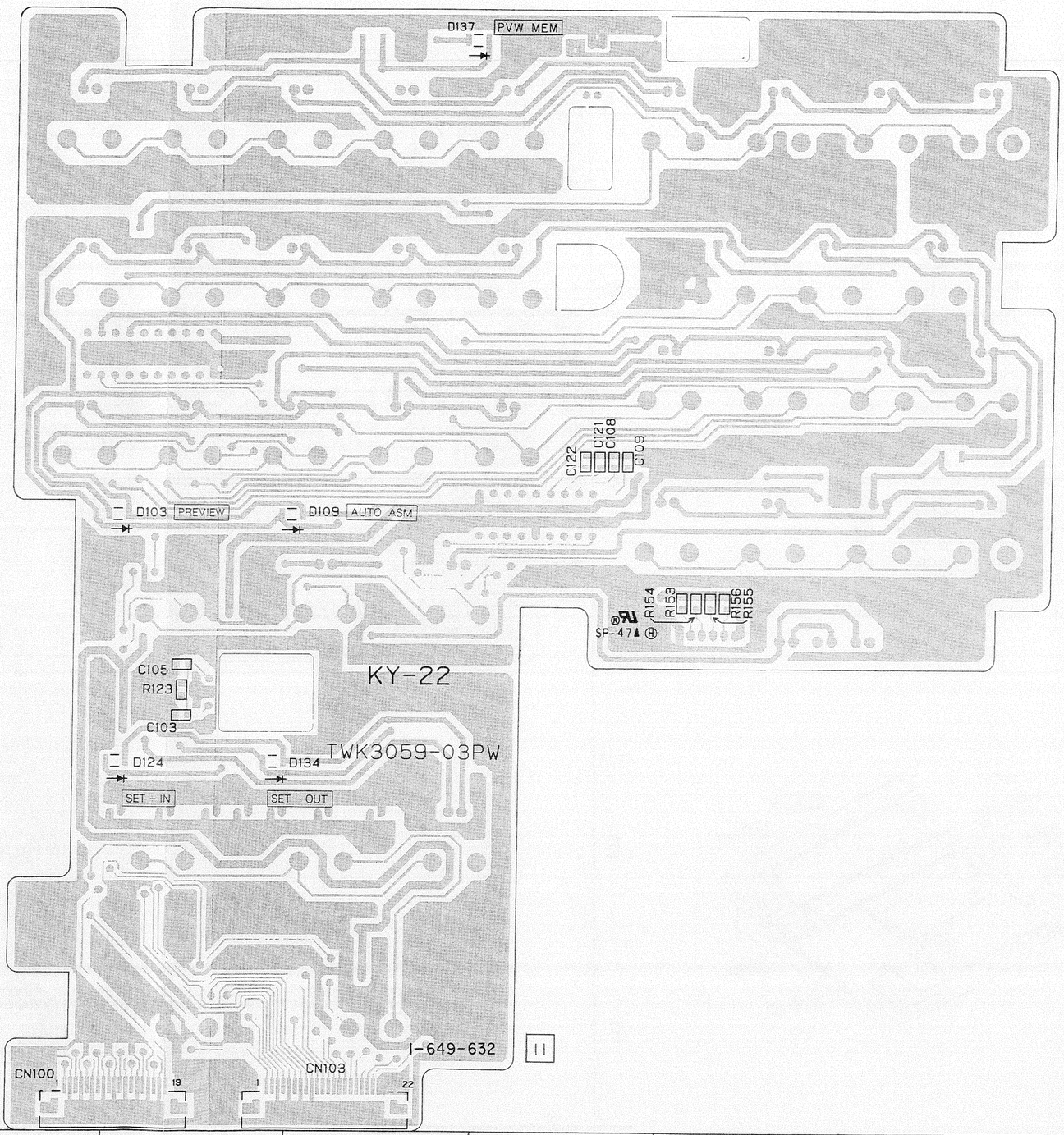


VE-V13317 / Druck 39

3)

KY-22 BOARD (SIDE A)





3 4 5 6 7 8 9 10 11 12

4-48

4-49

KEY EDIT

RS-62 (RS-422/232C) /ED-41 (EDL INPUT/OUTPUT) PRINTED WIRING BOARD

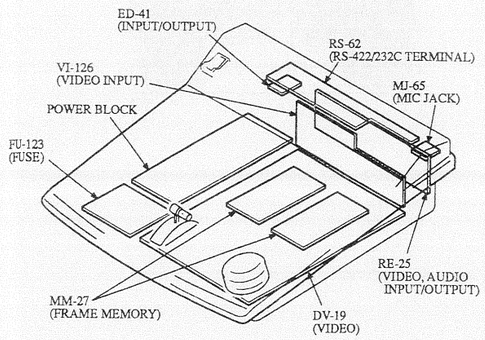
– Ref No. RS-62 BOARD : 4,000/ED-41 BOARD : 2,000 Seriese –

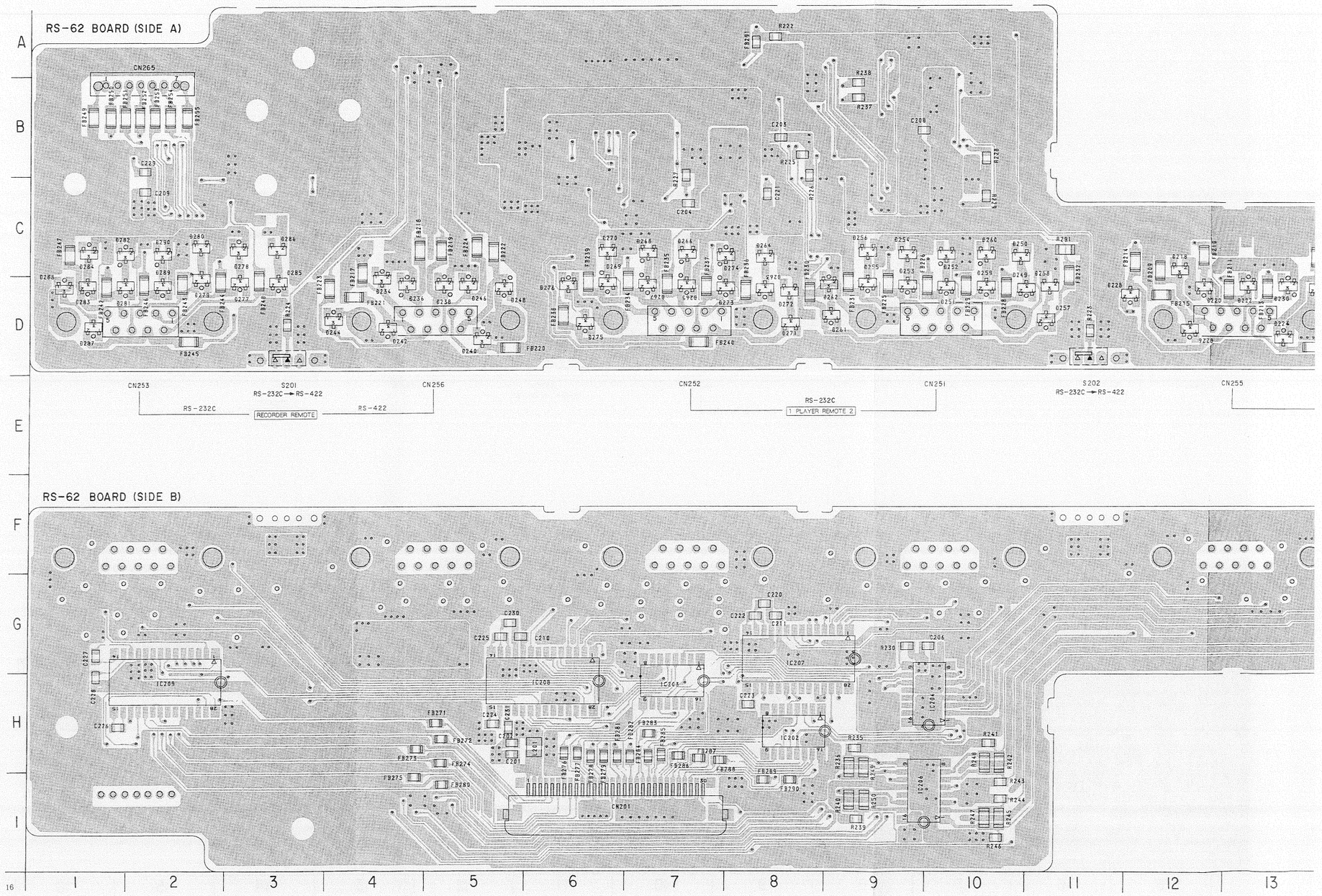
RS-62 BOARD

CN201	I-7	D258	C-11
CN251	D-10	D259	C-10
CN252	D-7	D260	C-10
CN253	D-2	D261	D-9
CN254	D-15	D262	D-9
CN255	D-13	D263	C-8
CN256	D-5	D264	C-8
CN265	A-2	D265	D-7
		D266	C-7
D202	C-15	D267	D-7
D204	C-15	D268	C-7
D206	C-15	D269	C-6
D208	D-16	D270	C-6
D210	D-15	D271	D-8
D212	D-14	D272	D-8
D214	C-16	D273	D-8
D216	C-16	D274	C-8
D218	C-12	D275	D-6
D220	D-12	D276	D-6
D222	C-13	D277	D-3
D224	D-13	D278	C-3
D226	D-12	D279	D-2
D228	C-12	D280	C-2
D230	C-13	D281	D-2
D232	C-14	D282	C-2
D234	D-4	D283	D-1
D236	D-4	D284	C-1
D238	D-5	D285	C-3
D240	D-5	D286	C-3
D242	D-4	D287	A-1
D244	D-4	D288	A-1
D246	D-5	D289	C-2
D248	D-5	D290	C-2
D249	C-10		
D250	C-10	IC202	H-8
D251	D-10	IC203	H-7
D252	C-10	IC204	H-10
D253	C-9	IC206	I-9
D254	C-9	IC207	G-8
D255	C-9	IC208	H-6
D256	C-9	IC209	H-2
D257	D-11		

ED-41 BOARD

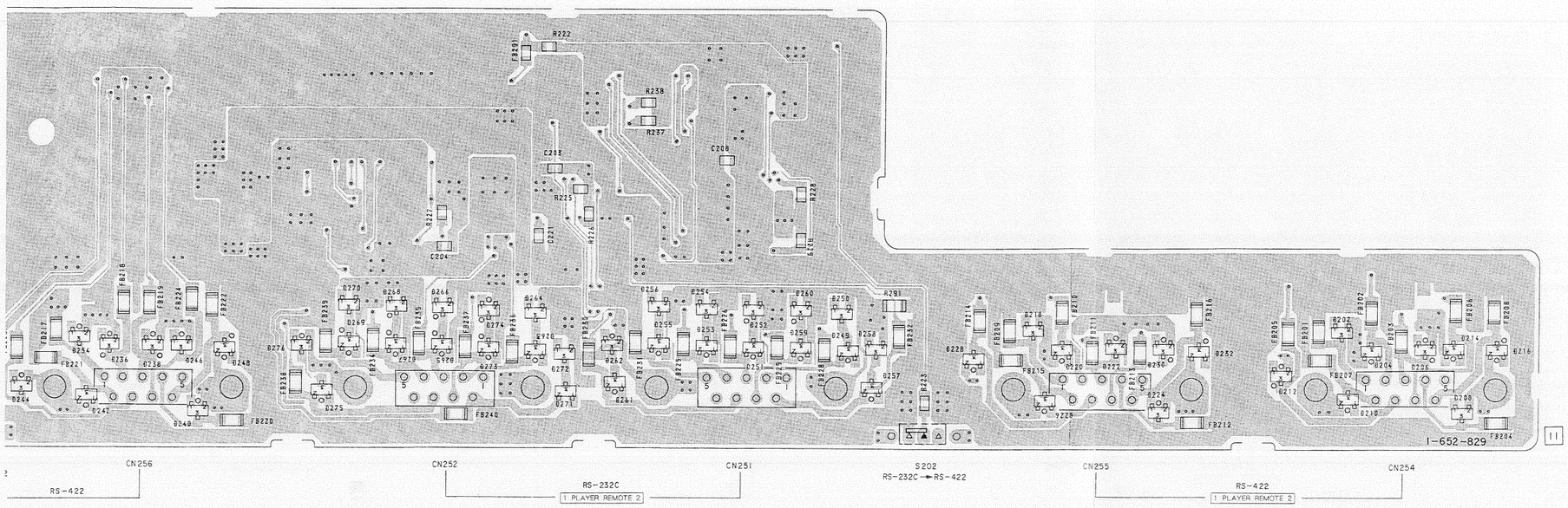
CN260	D-19
D851	C-18
D852	C-18
D853	F-19
D854	G-19
D855	G-19
D856	G-19
D857	D-18
D858	D-18
D859	D-19
D860	D-19
D861	C-19
D862	C-19
D863	G-19
D864	G-19
W210	B-19



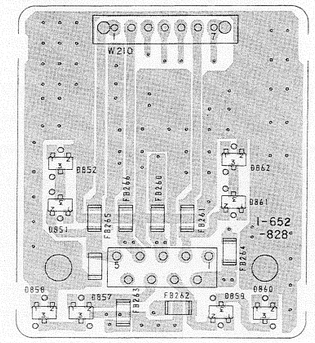


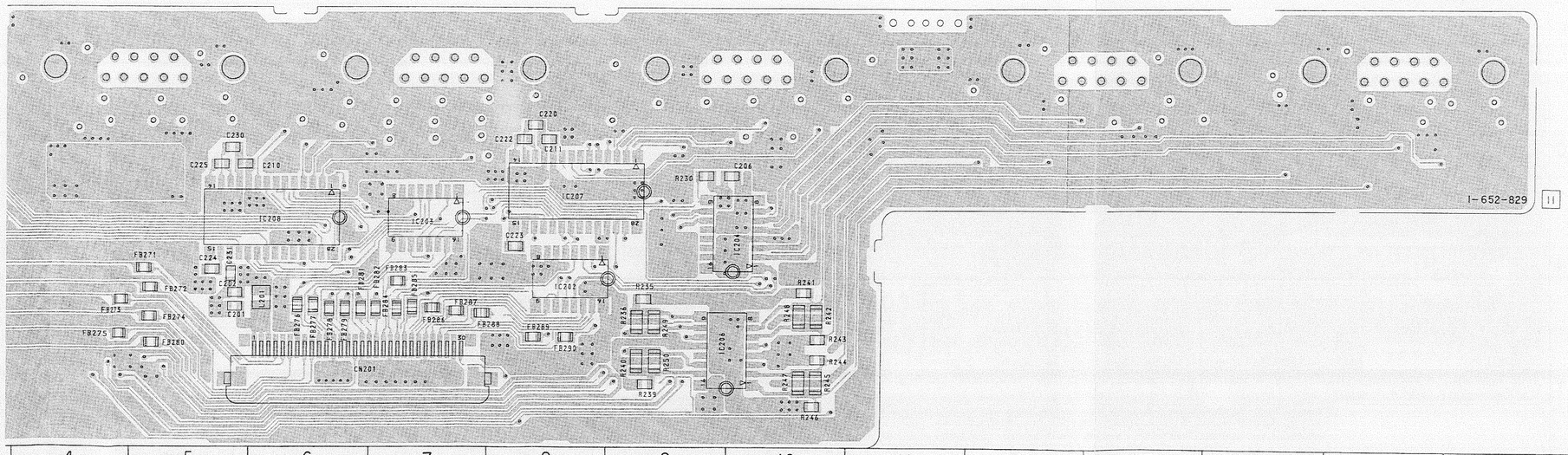
IT) PRINTED WIRING BOARD

,000 Seriese –

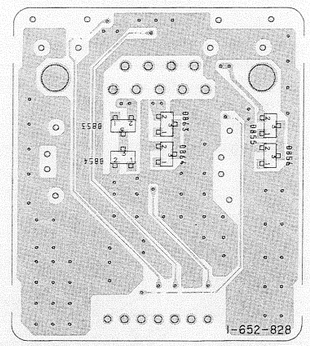


ED-41 BOARD (SIDE A)



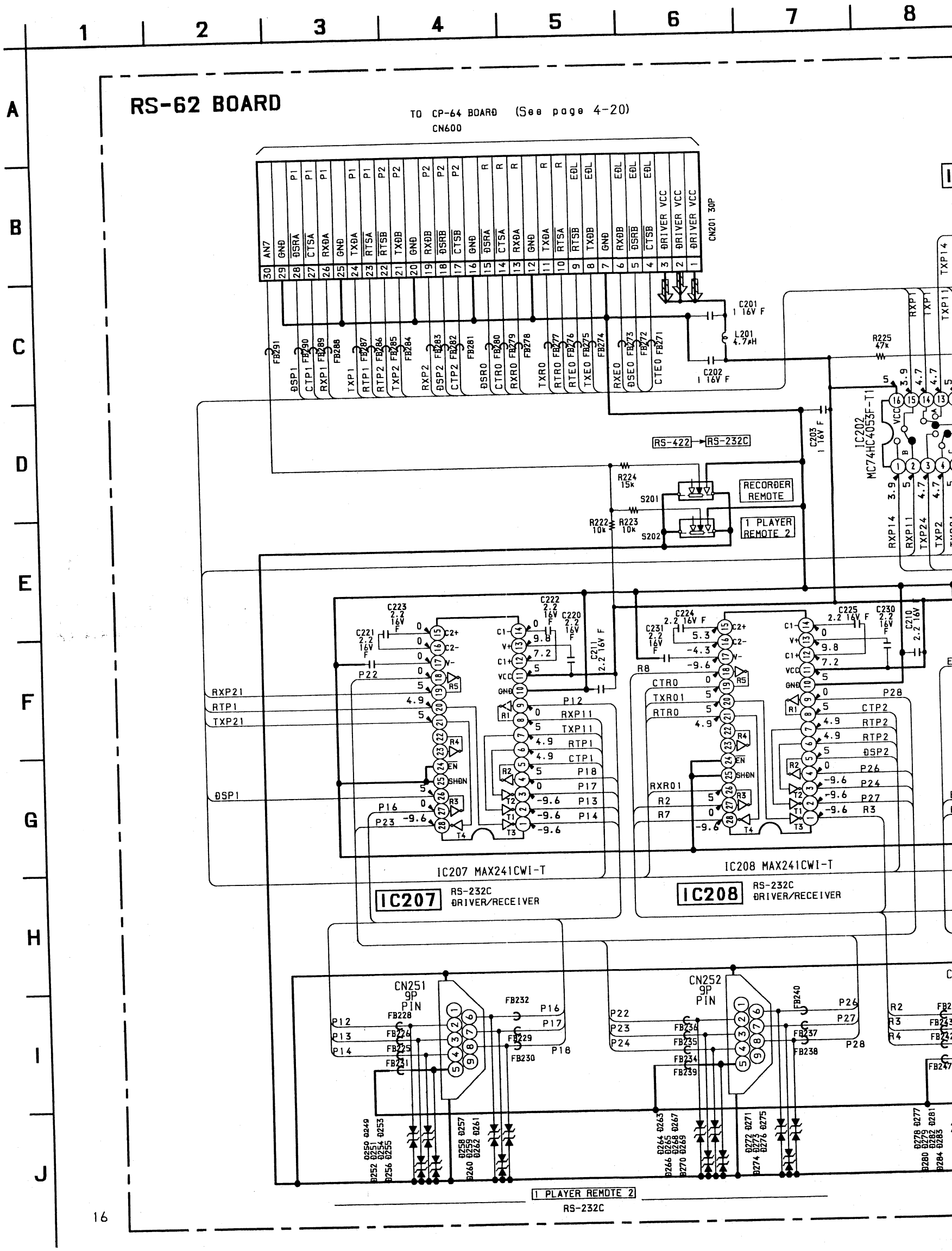


ED-41 BOARD (SIDE B)



RS-62 (RS-422/232C) /ED-41 (EDL INPUT/OUTPUT) SCHEMATIC DIAGRAM

– Ref No. RS-62 BOARD : 4,000/ED-41 BOARD : 2,000 Seriese –



7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16

IC202 IC203
RS-232C/422
SELECT SWITCH

CN251-CN253

IC204
RS-422
ÐRIVER

Ð202-248 RÐ9.1M

IC202 MC74HC4053F-T1
IC203 MC74HC4053F-T1
IC204 AM26LS31CNS-T1
IC206 AM26LS32ACNS-T1

RS-422
ÐRIVER
IC206

IC209 MAX241CWI-T
IC209 RS-232C ÐRIVER/RECEIVER

CN256 9P SOCKET
CN254 9P SOCKET

RECORÐER REMOTE
RS-232C
CN253 9P PIN

CN265 7P

7	TXÐ EÐL
6	RXÐ EÐL
5	RTS EÐL
4	CTS EÐL
3	ÐSR EÐL
2	ÐTR EÐL
1	GNÐ

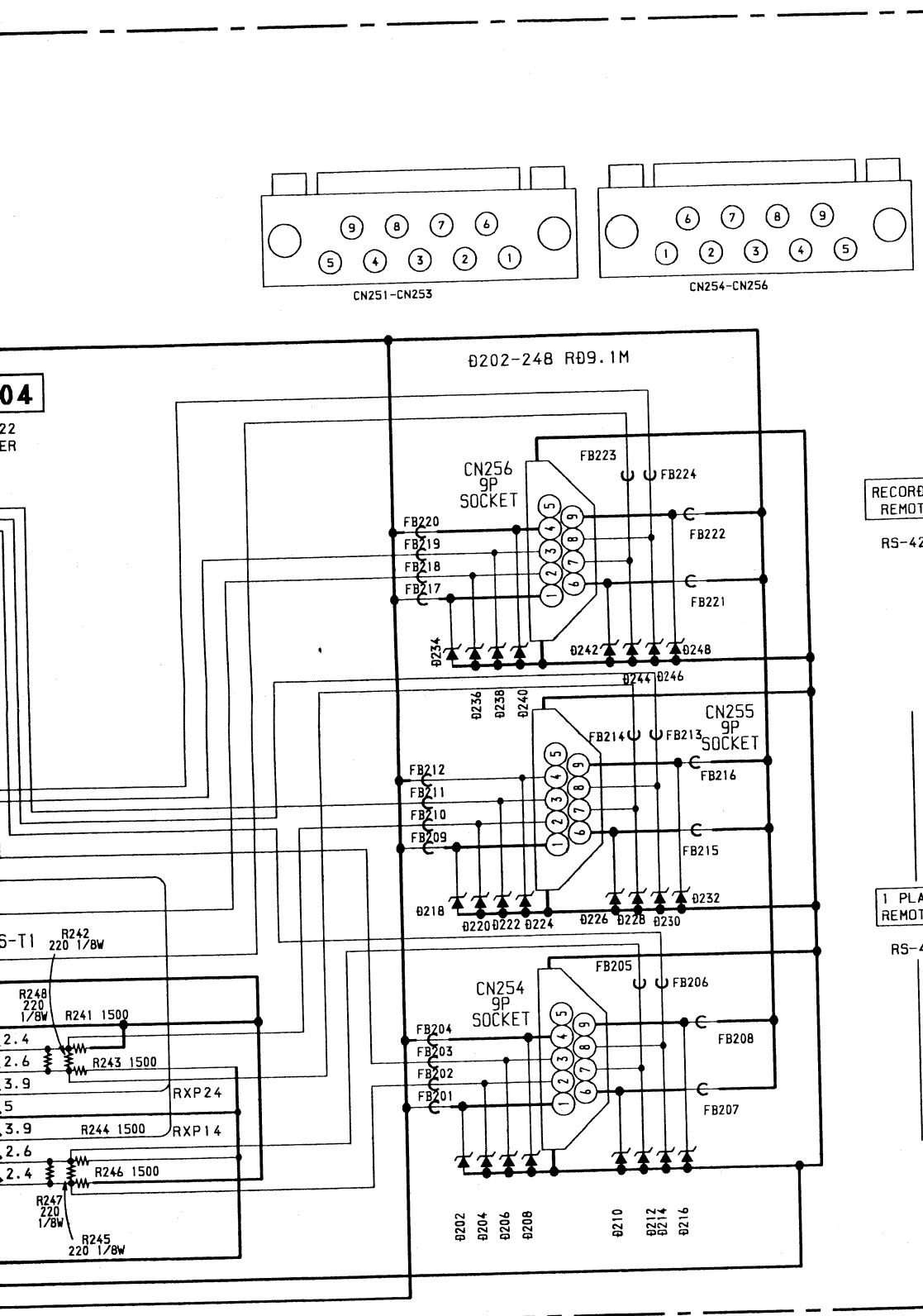
W210 7P

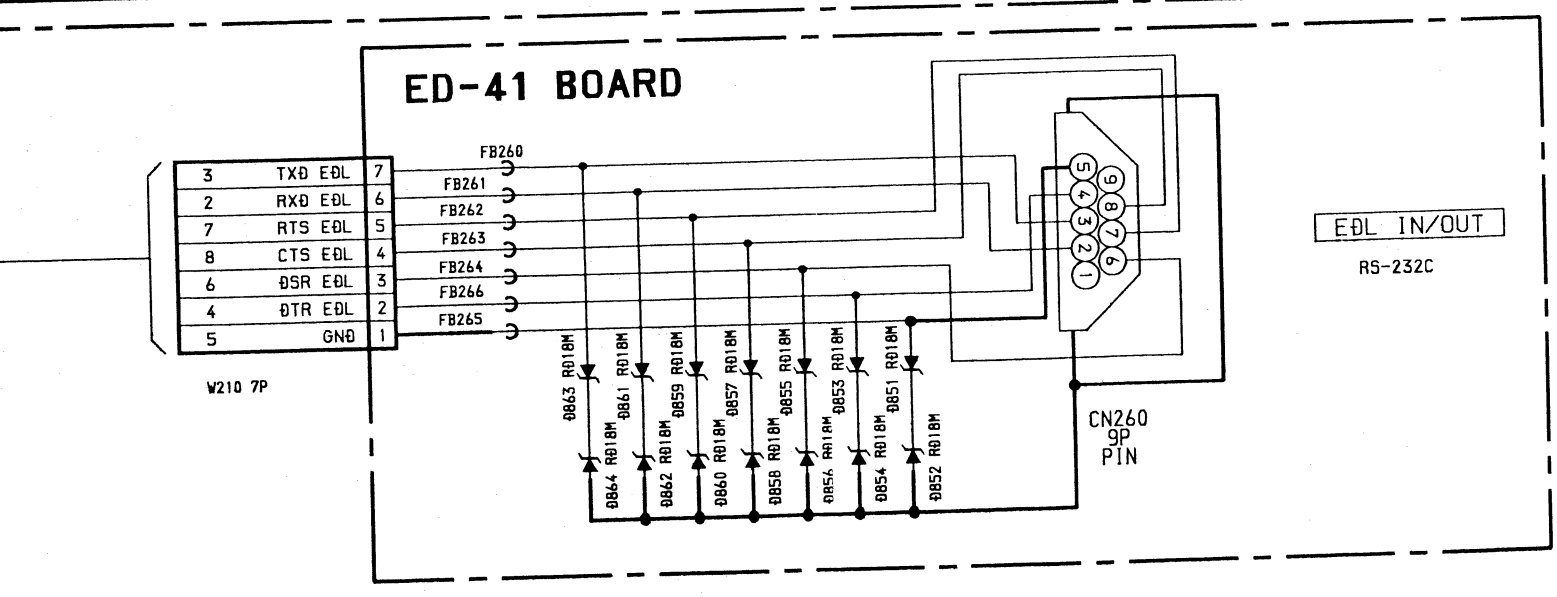
3	TXÐ EÐL
2	RXÐ EÐL
7	RTS EÐL
8	CTS EÐL
6	ÐSR EÐL
4	ÐTR EÐL
5	GNÐ

ED-41 BOARD

ÐØ49-290 RÐ18M

13 | 14 | 15 | 16 | 17 | 18 | 19 | 20





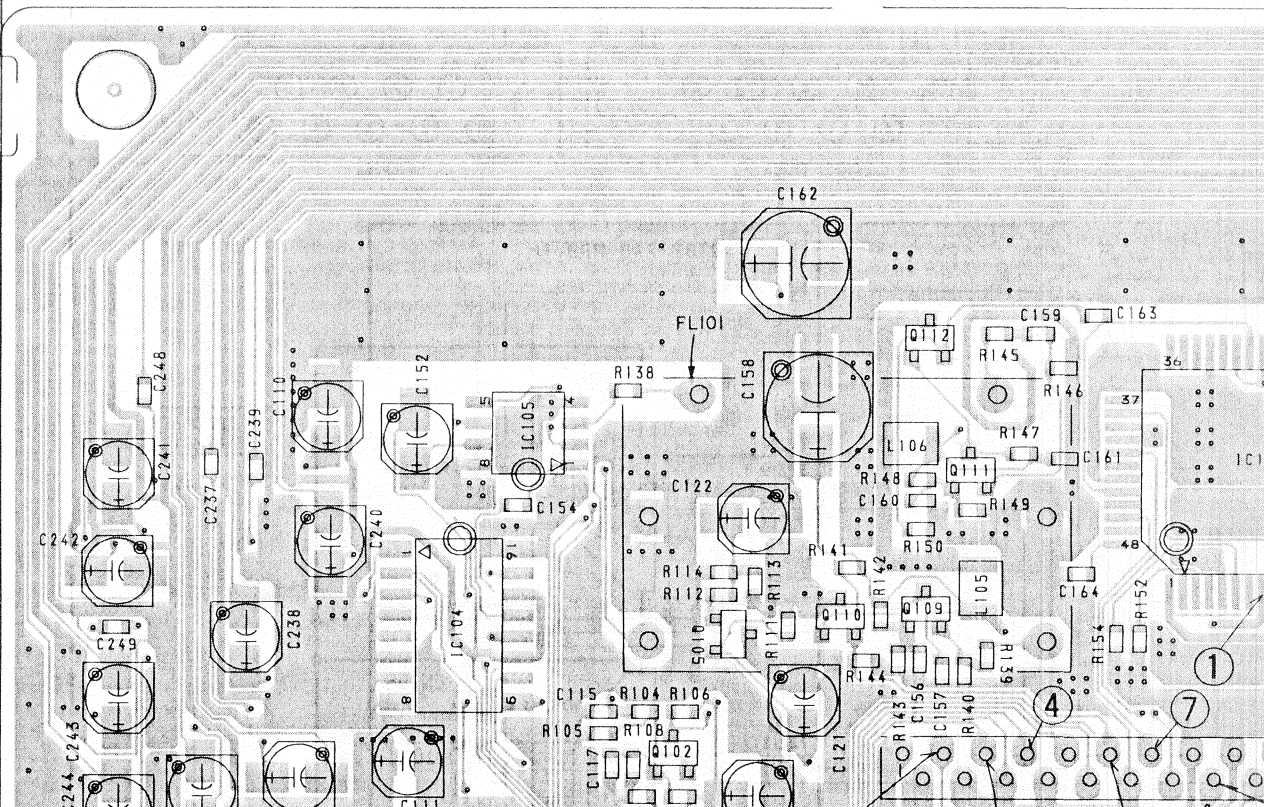
VI-126 (VIDEO INPUT) PRINTED WIRING BOARD

– Ref No. VI-126 BOARD : 6,000 Seriese –

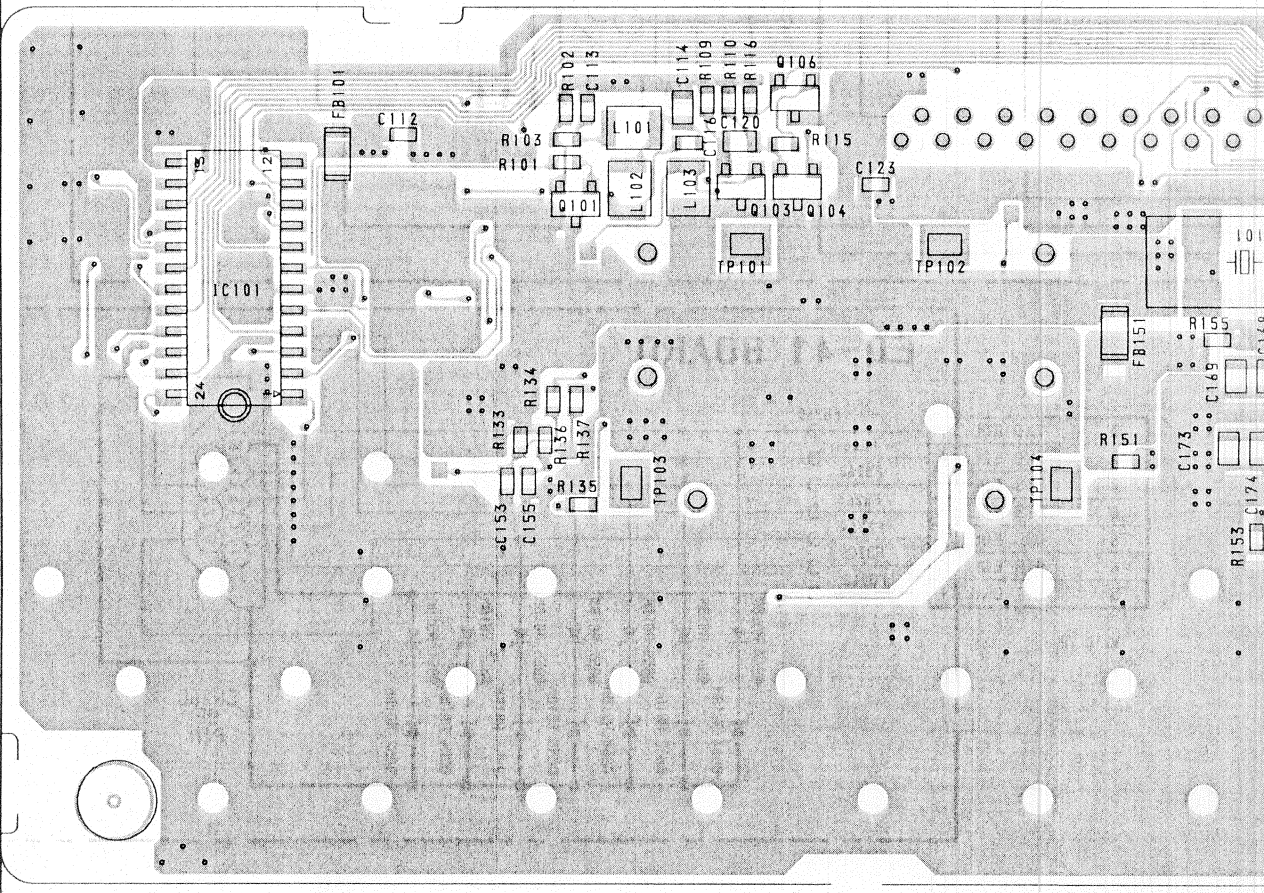
VI-126 BOARD

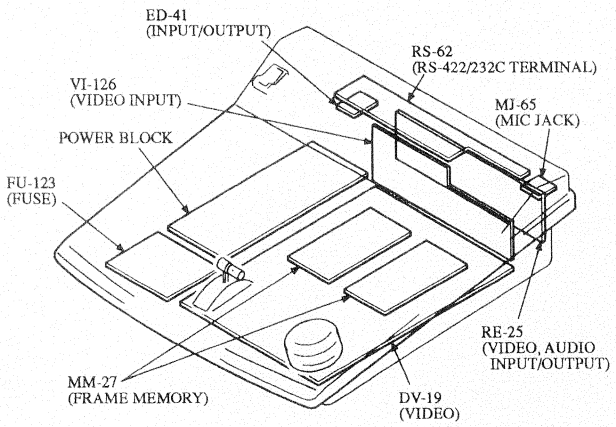
CN101	A-9
CN102	E-4
CN103	D-10
CN104	A-9
CN105	A-12
IC101	G-1
IC104	D-2
IC105	C-2
IC106	D-5
IC107	G-6
IC191	H-6
IC201	G-7
IC204	D-8
IC205	C-8
IC206	C-10
IC207	G-11
IC208	G-12
IC209	G-13
IC210	G-14
IC211	H-12
IC291	H-12
Q101	G-3
Q102	D-3
Q103	G-3
Q104	G-3
Q105	D-3
Q106	F-3
Q109	D-4
Q110	D-3
Q111	D-4
Q112	C-4
Q113	D-6
Q114	H-6
Q115	G-6
Q200	D-13
Q201	G-8
Q202	D-8
Q203	G-9
Q204	G-9
Q205	D-9
Q206	G-9
Q207	D-13
Q208	D-12
Q209	D-9
Q210	D-9
Q211	C-9
Q212	C-9
Q213	C-11
Q214	H-11
Q215	G-11
Q216	D-12

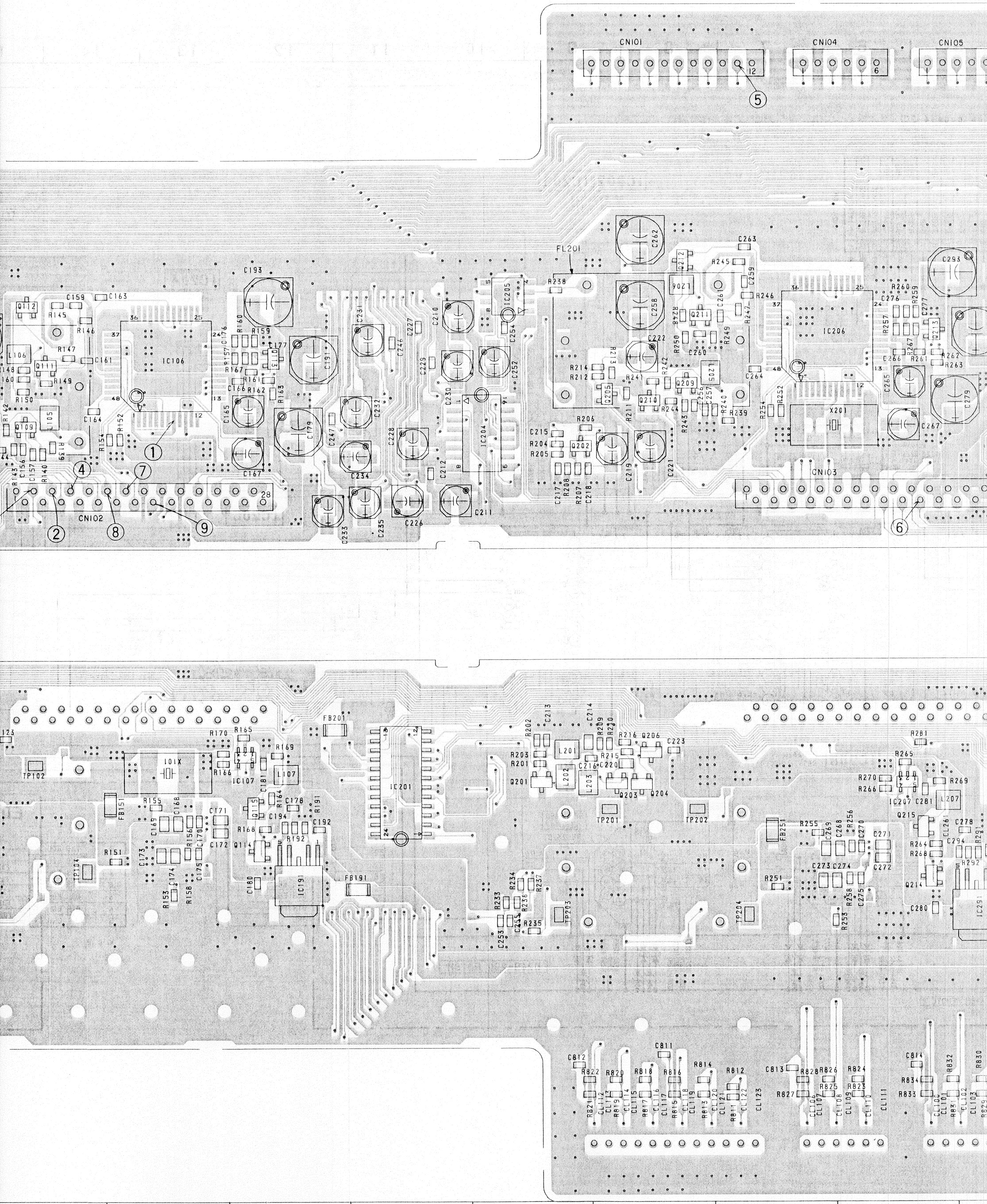
VI-126 BOARD (SIDE A)



VI-126 BOARD (SIDE B)



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CN105
FL201
C193
C159
C163
C262
C263
R245
C293
R238
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C276
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C277
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C259
C258
C261
R247
IC106
IC205
IC206
IC204
IC201
IC107
IC191
X201
CN102
CN103
CN104
TP102
TP104
TP201
TP202
TP203
TP204
FB201
FB251
FB191
FB151
101X
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CL101
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CL123
C811
C812
C813
C814
R811
R812
R813
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R815
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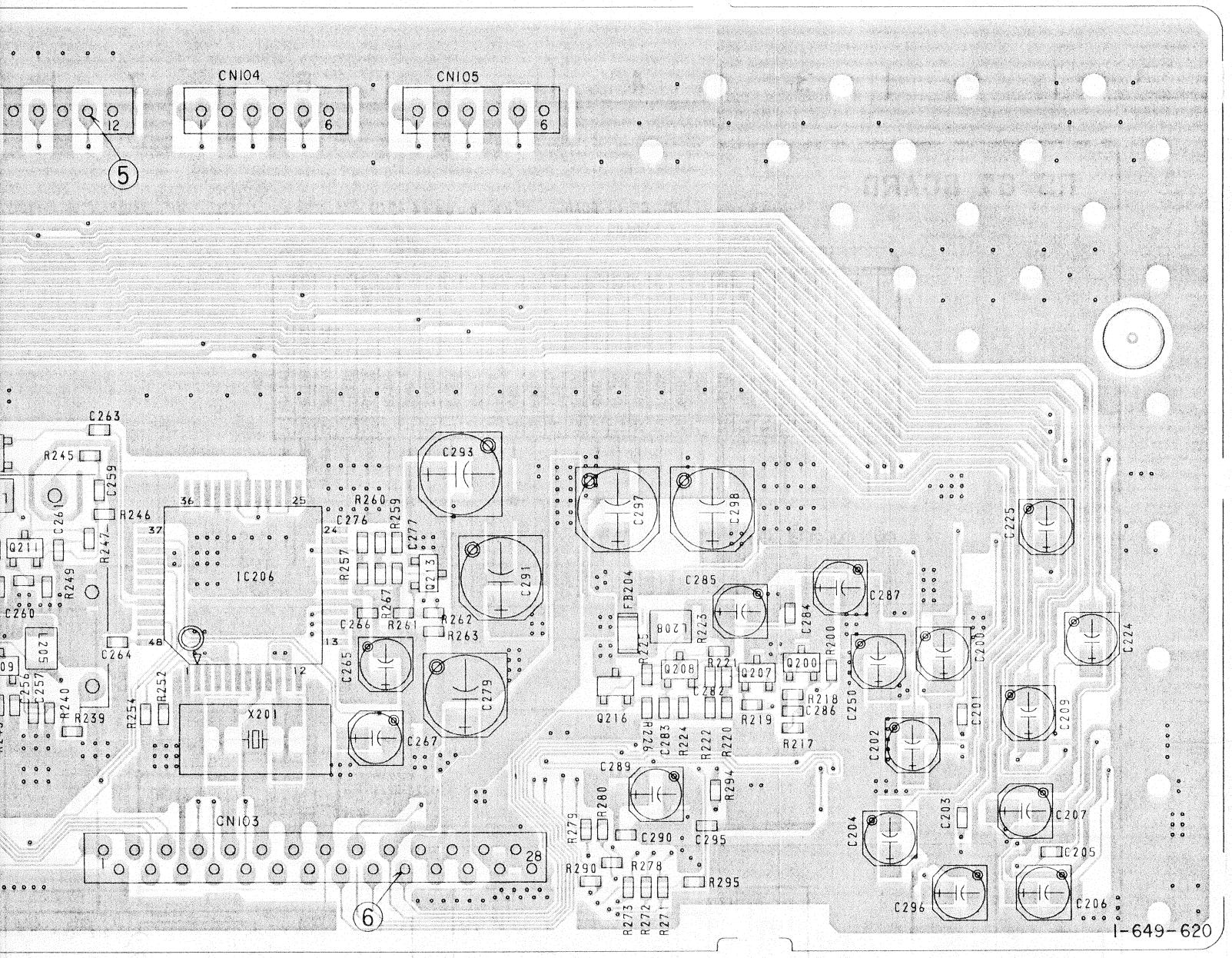
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CN105
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C263
R245
C259
R246
C261
R247
Q211
R249
C260
C264
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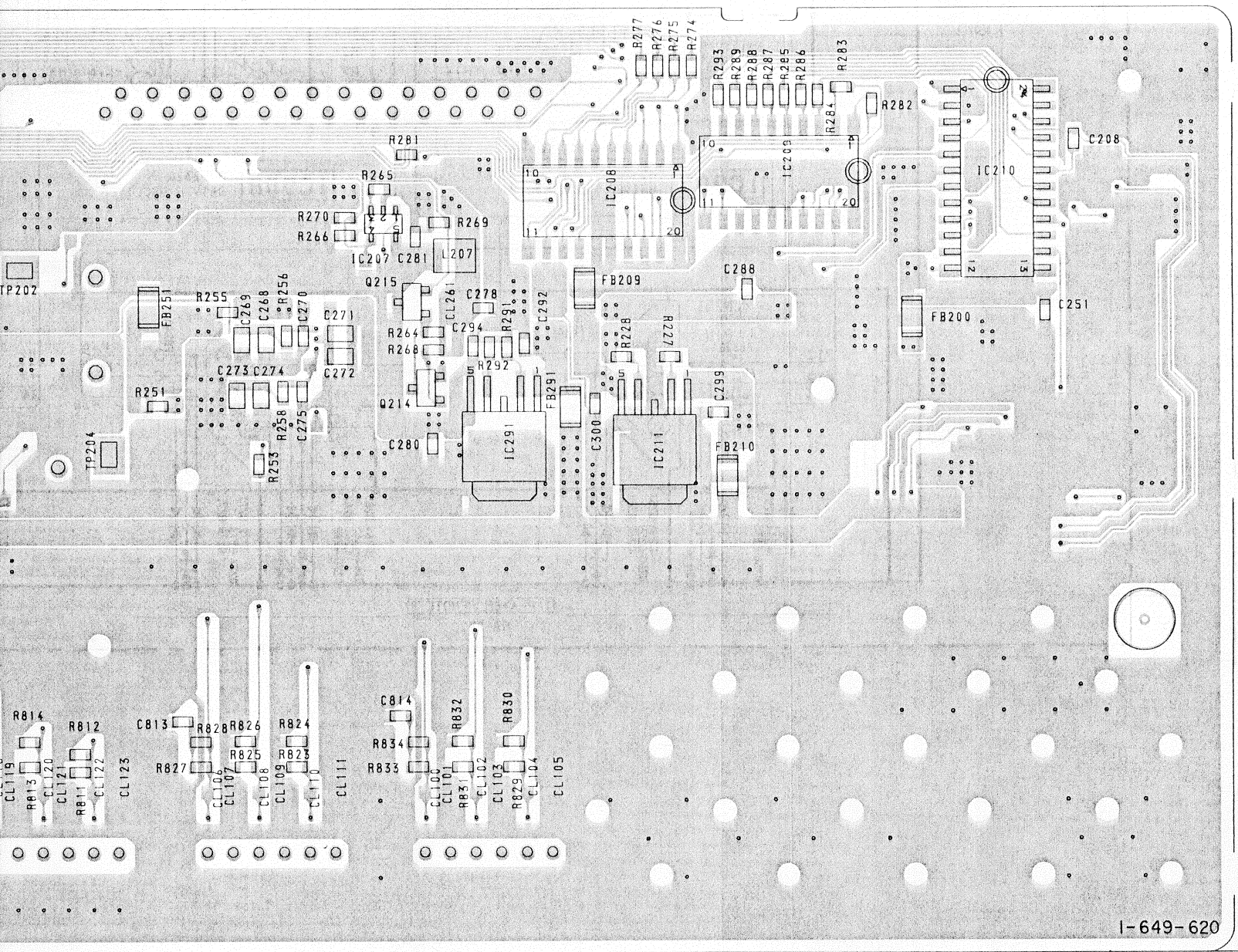
R240
R254
R252
C256
C257
L205
X201
IC206
36
25
37
24
48
13
1
12
R257
R260
C276
R259
C277
Q213
R267
R262
R263
R261
C266
C265
C267
C279
C291
C293
C297
C298
FB204
L208
R223
Q208
R221
Q207
Q200
R218
C286
R219
R217
C285
C284
C287
R200
C208
C224
C225
C250
C202
C201
C209
C203
C207
C205
C204
C296
C206
Q216
R226
C283
R224
R222
R220
C289
R294
C290
C295
R280
R279
R290
R278
R295
R273
R272
R271
CN103
28
6
I-649-620
12


R277
R276
R275
R274
R293
R289
R288
R287
R285
R286
R283
R282
R284
R281
R265
R270
R266
R269
IC208
IC209
IC210
C208
IC207
C281
L207
Q215
FB209
C288
TP202
FB251
R255
C269
C268
R256
C270
C271
C278
C294
R291
C292
R264
R268
R292
R228
R227
FB200
C251
C273
C274
C272
R251
Q214
C280
IC291
FB291
C300
IC211
C299
FB210
TP204
R253
R258
C275
C814
R832
R830
R834
R833
C813
R828
R826
R824
R827
R825
R823
R814
R812
R813
R811
CL119
CL120
CL121
CL122
CL123
CL106
CL107
CL108
CL109
CL110
CL111
CL100
CL101
CL102
CL103
CL104
CL105
R831
R829
I-649-620
12
10
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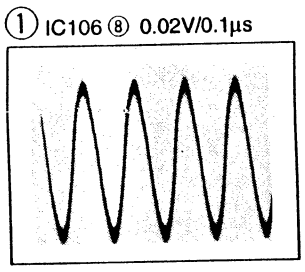
15

VI-126 (VIDEO INPUT) SCHEMATIC DIAGRAM

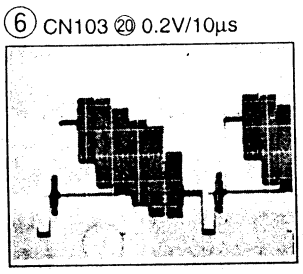
– Ref No. VI-126 BOARD : 6,000 Seriese –

VI-126 Board

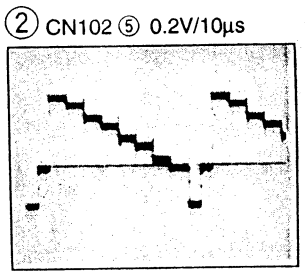
① IC106 ⑧ 0.02V/0.1µs



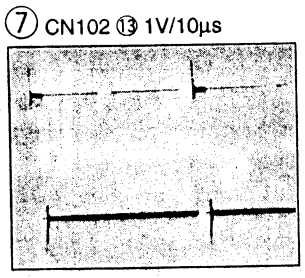
⑥ CN103 ⑳ 0.2V/10µs



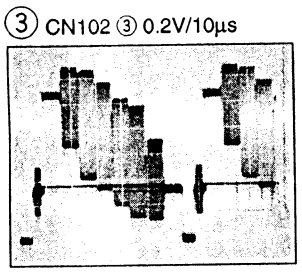
② CN102 ⑤ 0.2V/10µs



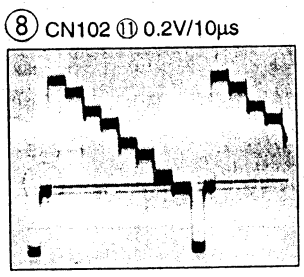
⑦ CN102 ⑬ 1V/10µs



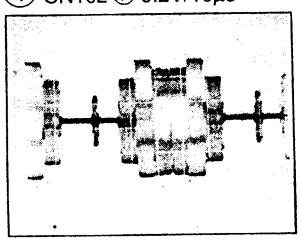
③ CN102 ③ 0.2V/10µs



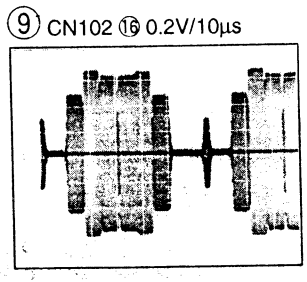
⑧ CN102 ⑪ 0.2V/10µs



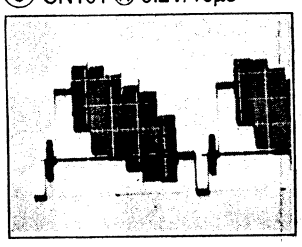
④ CN102 ⑦ 0.2V/10µs

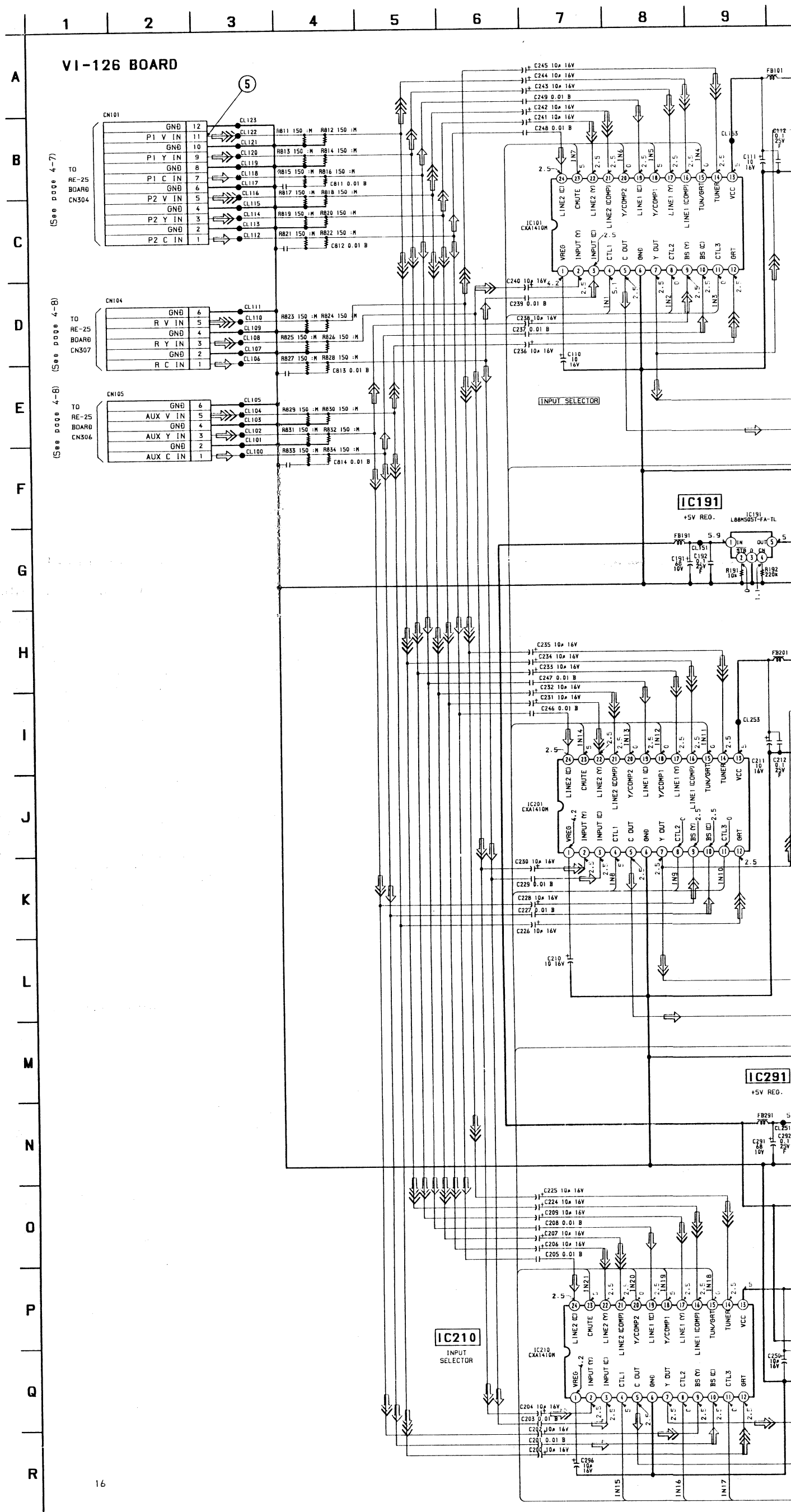


⑨ CN102 ⑯ 0.2V/10µs



⑤ CN101 ⑪ 0.2V/10µs





• **SIGNAL PATH (ANALOG)**

VIDEO SIGNAL			AUDIO SIGNAL
CHROMA	Y	Y/CHROMA	
⇨	⇨	⇨	

IC101 INPUT SELECT

Q101 BUFFER

Q102, 103 AMP

Q104-106 CLAMP

IC104 SELECTOR

IC105 VCA

PRE FILTER
Y:LOWPASS
DELAY EQUALIZER
C:BANDPASS (DELAY FLAT)

Q109, 110 AMP

IC106 ACC&ACK

IC107 COMP.

PAL

IC191 +5V REG.

ACC & ACK

X101 1FSC

Q115-115 AMP

IC201 INPUT SELECT

Q202, 203 AMP

Q204-206 CLAMP

IC204 SELECTER

IC205 VCA

Q209, 210 AMP

IC206 ACC&ACK

IC207 COMP.

PAL

IC291 +5V REG.

Q211, 212 AMP

X201 1FSC

Q213-215 COMP.

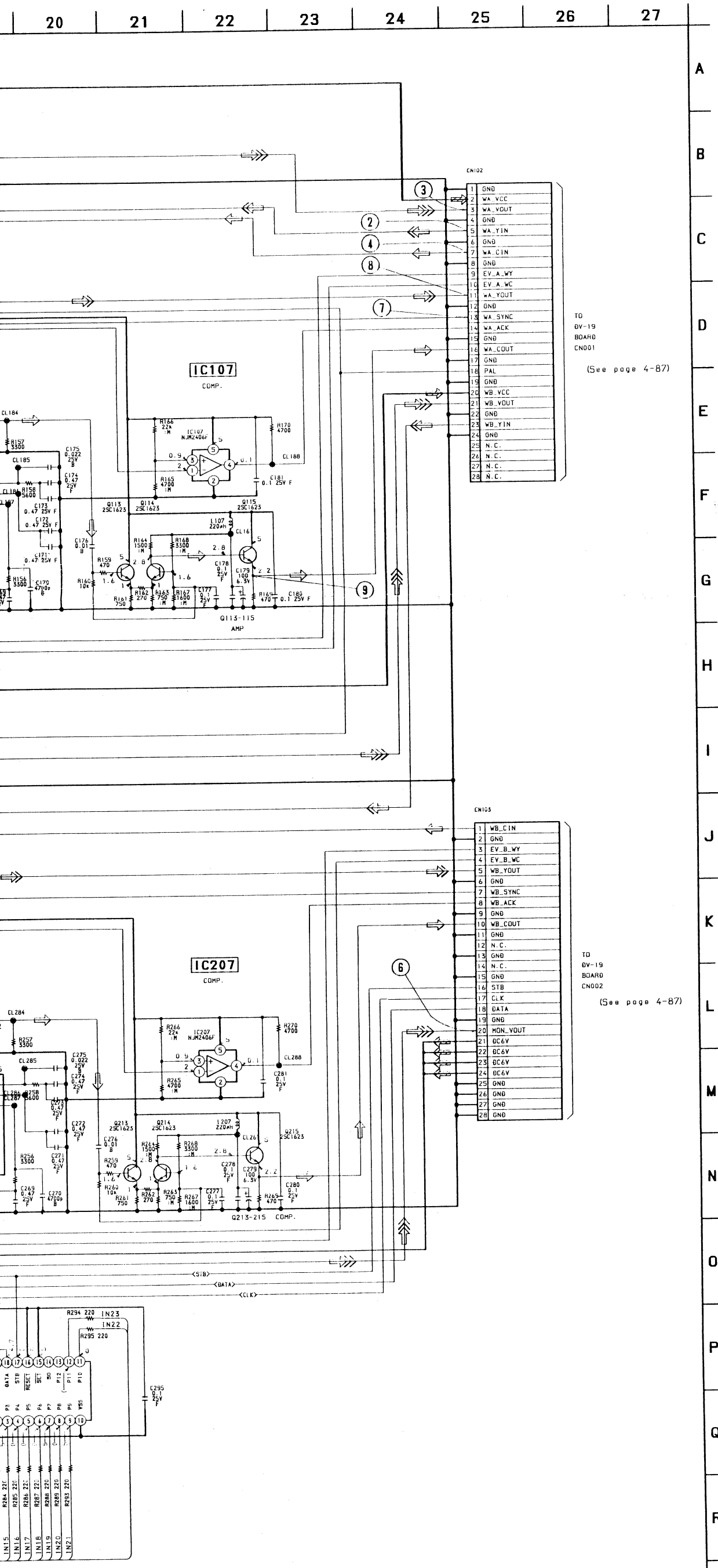
IC211 +5V REG.

Q200 BUFFER

Q207 BUFFER

Q208, 216 Y&C MIXER

IC208 IC209 ADDRESS DECODER (SERIAL TO PARALLEL)


20
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A
B
C
D
E
F
G
H
I
J
K
L
M
N
O
P
Q
R
CN102
1 GND
2 WA_VCC
3 WA_VOUT
4 GND
5 WA_YIN
6 GND
7 WA_CIN
8 GND
9 EV_A_WY
10 EV_A_WC
11 WA_YOUT
12 GND
13 WA_SYNC
14 WA_ACK
15 GND
16 WA_COUT
17 GND
18 PAL
19 GND
20 WB_VCC
21 WB_VOUT
22 GND
23 WB_YIN
24 GND
25 N.C.
26 N.C.
27 N.C.
28 N.C.
TO
DV-19
BOARD
CN001
(See page 4-87)
IC107
COMP.
IC107
NJM2406F
R166 22k :M
R170 4700
R165 4700 :M
CL188
C181 0.1 25V F
CL184
R157 3300
CL185
C175 0.022 25V B
C174 0.47 25V F
CL186
R158 5600
CL187
C173 0.47 25V F
C172 0.47 25V F
C171 0.47 25V F
R156 3300
C170 4700p B
Q113 2SC1623
Q114 2SC1623
Q115 2SC1623
L107 220uH
CL16
C176 0.01 B
R164 1500 :M
R168 3300 :M
R159 470
R160 10k
R161 750
R162 270
R163 750 :M
R167 1600 :M
C177 0.1 25V F
C178 0.1 25V F
C179 100 6.3V
R169 470
C180 0.1 25V F
Q113-115
AMP
CN103
1 WB_CIN
2 GND
3 EV_B_WY
4 EV_B_WC
5 WB_YOUT
6 GND
7 WB_SYNC
8 WB_ACK
9 GND
10 WB_COUT
11 GND
12 N.C.
13 GND
14 N.C.
15 GND
16 STB
17 CLK
18 DATA
19 GND
20 MON_VOUT
21 DC6V
22 DC6V
23 DC6V
24 DC6V
25 GND
26 GND
27 GND
28 GND
TO
DV-19
BOARD
CN002
(See page 4-87)
IC207
COMP.
IC207
NJM2406F
R266 22k :M
R270 4700
R265 4700 :M
CL288
C281 0.1 25V F
CL284
R257 3300
CL285
C275 0.022 25V B
C274 0.47 25V F
CL286
R255 3300
CL287
C273 0.47 25V F
C272 0.47 25V F
R256 3300
C271 0.47 25V F
C269 0.47 25V F
C270 4700p B
Q213 2SC1623
Q214 2SC1623
Q215 2SC1623
L207 220uH
CL26
C276 0.01 B
R264 1500 :M
R268 3300 :M
R259 470
R260 10k
R261 750
R262 270
R263 750 :M
R267 1600 :M
C277 0.1 25V F
C278 0.1 25V F
C279 100 6.3V
R265 470
C280 0.1 25V F
Q213-215 COMP.
<STB>
<DATA>
<CLK>
R294 220 IN23
IN22
R295 220
C295 0.1 25V F
R284 220
R285 220
R286 220
R287 220
R288 220
R289 220
R293 220
IN15
IN16
IN17
IN18
IN19
IN20
IN21

AM-32 BOARD

CN001	A-4	IC004	D-7	IC616	E-15
CN002	A-18	IC005	H-1	IC620	D-18
CN003	A-8	IC051	B-6		
CN004	A-6	IC061	B-6	Q001	A-8
CN005	B-17	IC071	B-18	Q002	A-8
CN006	A-11	IC072	B-18	Q003	A-12
CN007	B-18	IC505	F-4	Q004	A-7
		IC506	F-3	Q005	A-7
D031	C-17	IC507	E-13	Q006	A-7
D032	C-17	IC509	E-14	Q007	A-7
D501	D-10	IC510	E-11	Q031	C-17
D502	E-10	IC511	D-11	Q051	B-13
D503	D-10	IC512	D-15	Q052	B-13
D504	C-10	IC513	C-14	Q061	B-13
D505	C-10	IC515	D-18	Q062	B-13
D601	C-10	IC516	E-15	Q071	C-18
D602	D-10	IC518	C-11	Q072	C-18
D603	D-10	IC519	D-18		
		IC520	D-18		
IC001	C-12	IC603	F-1		
IC002	C-12	IC605	H-4		
IC003	D-12	IC606	H-3		

AM-32 (AUDIO) /MJ-65 (MIC JACK) /AS-46 (VOLUME) PRINTED WIRING BOARD

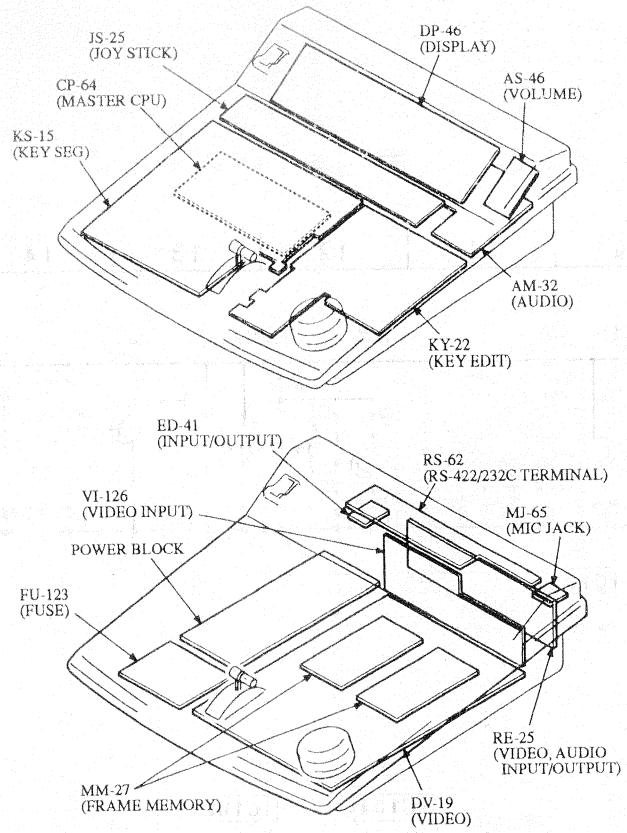
– Ref No. AM-32 BOARD : 1,000/ MJ-65 BOARD : 3,000/ AS-46 BOARD : 1,000 Seriese –

AM-32 BOARD (SIDE A)

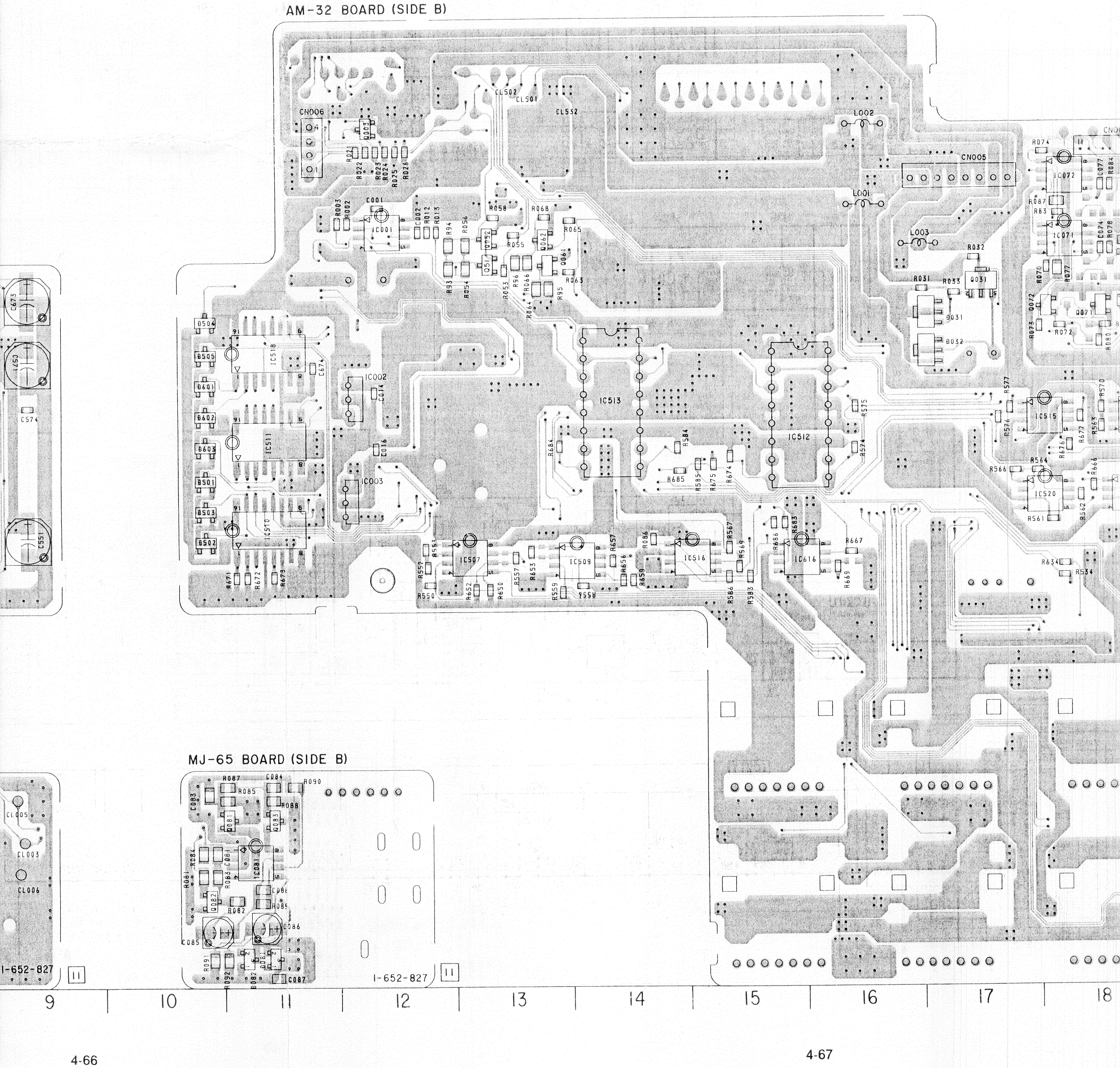
MJ-65 BOARD (SIDE A)

MJ-65 BOARD

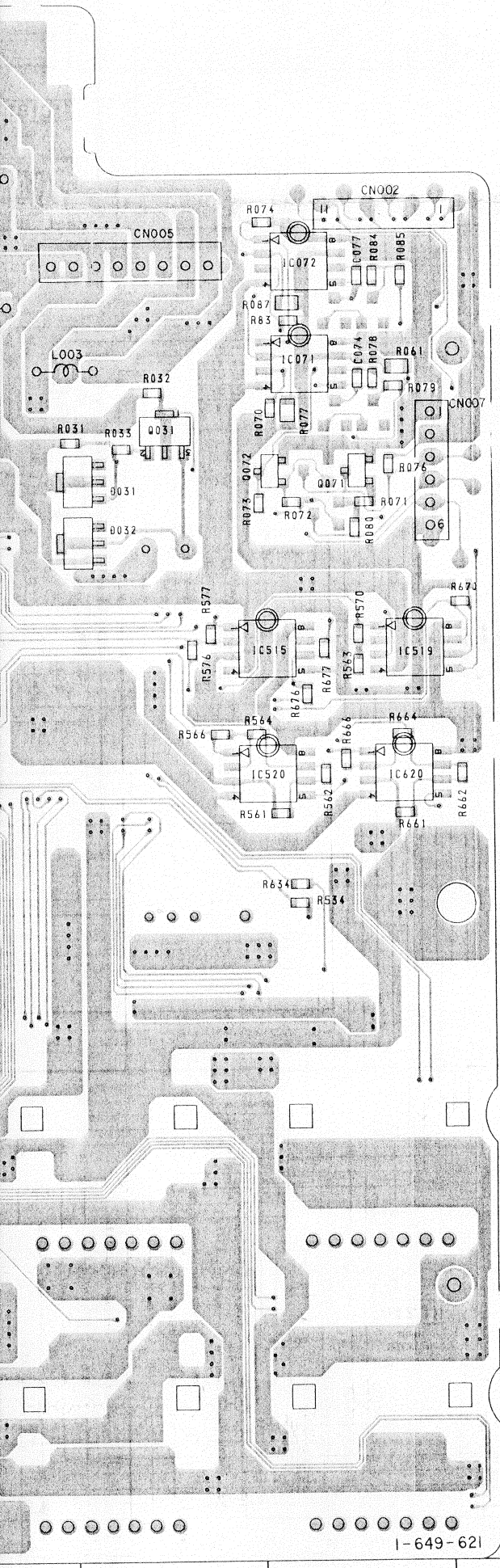
D081	H-11
D082	H-11
IC081	G-11
Q081	G-11
Q082	H-10
Q083	G-11
W081	G-7



AM-32 BOARD (SIDE B)



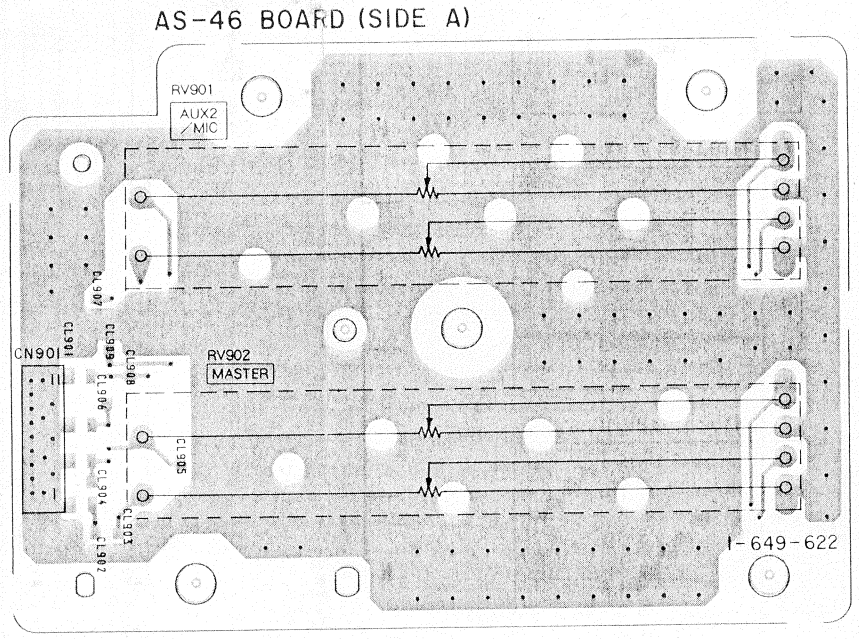
MJ-65 BOARD (SIDE B)



I-649-621

12

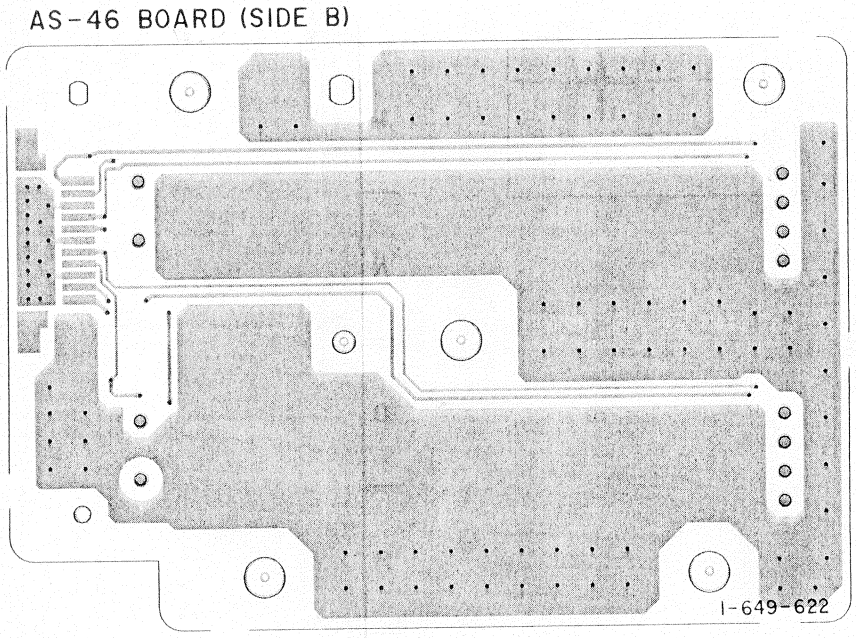
AS-46 BOARD (SIDE A)



I-649-622

11

AS-46 BOARD (SIDE B)



I-649-622

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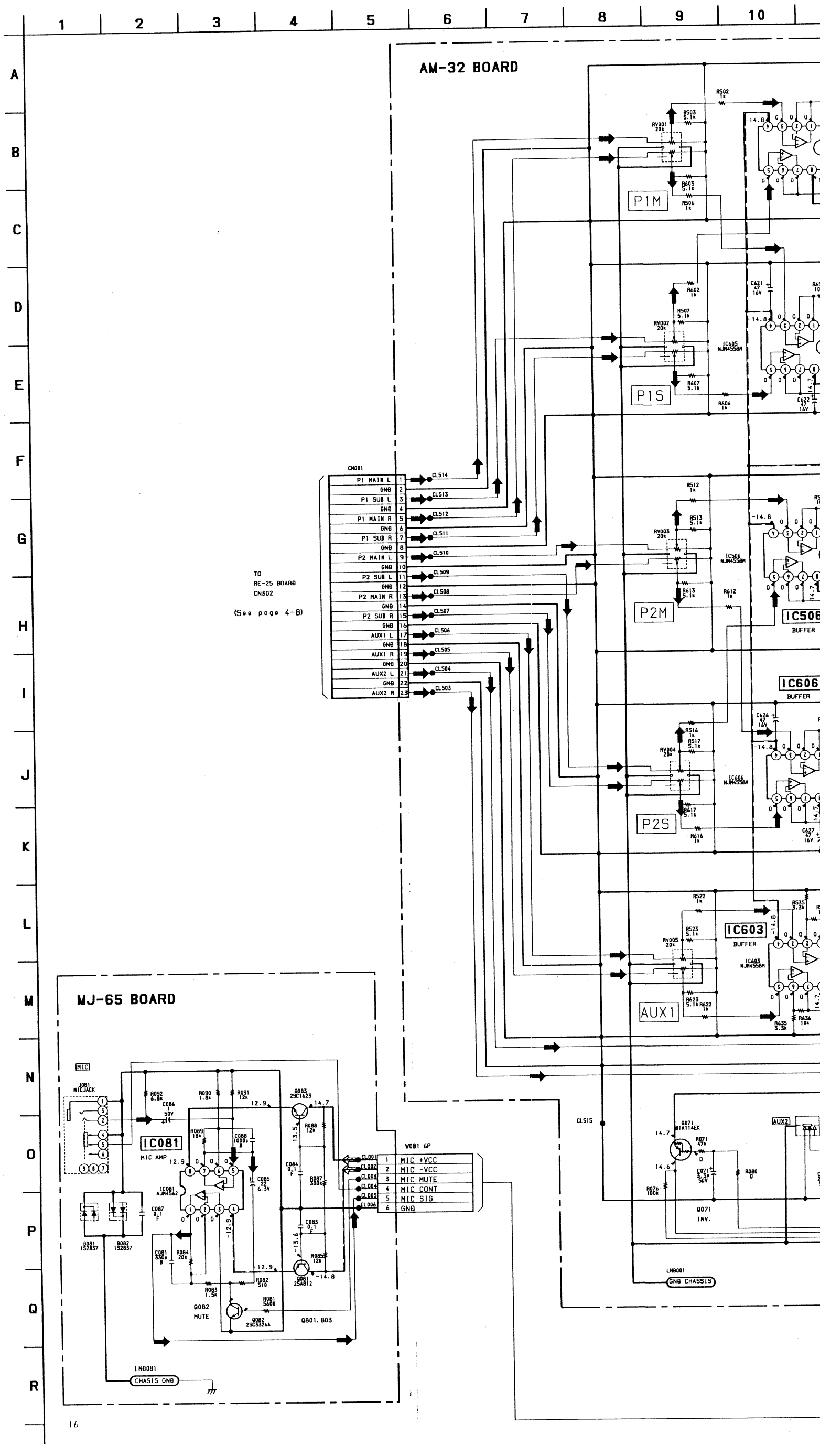
17 18 19 20 21 22 23

AM-32 (AUDIO) /MJ-65 (MIC JACK) /AS-46 (VOLUME) SCHEMATIC DIAGRAM

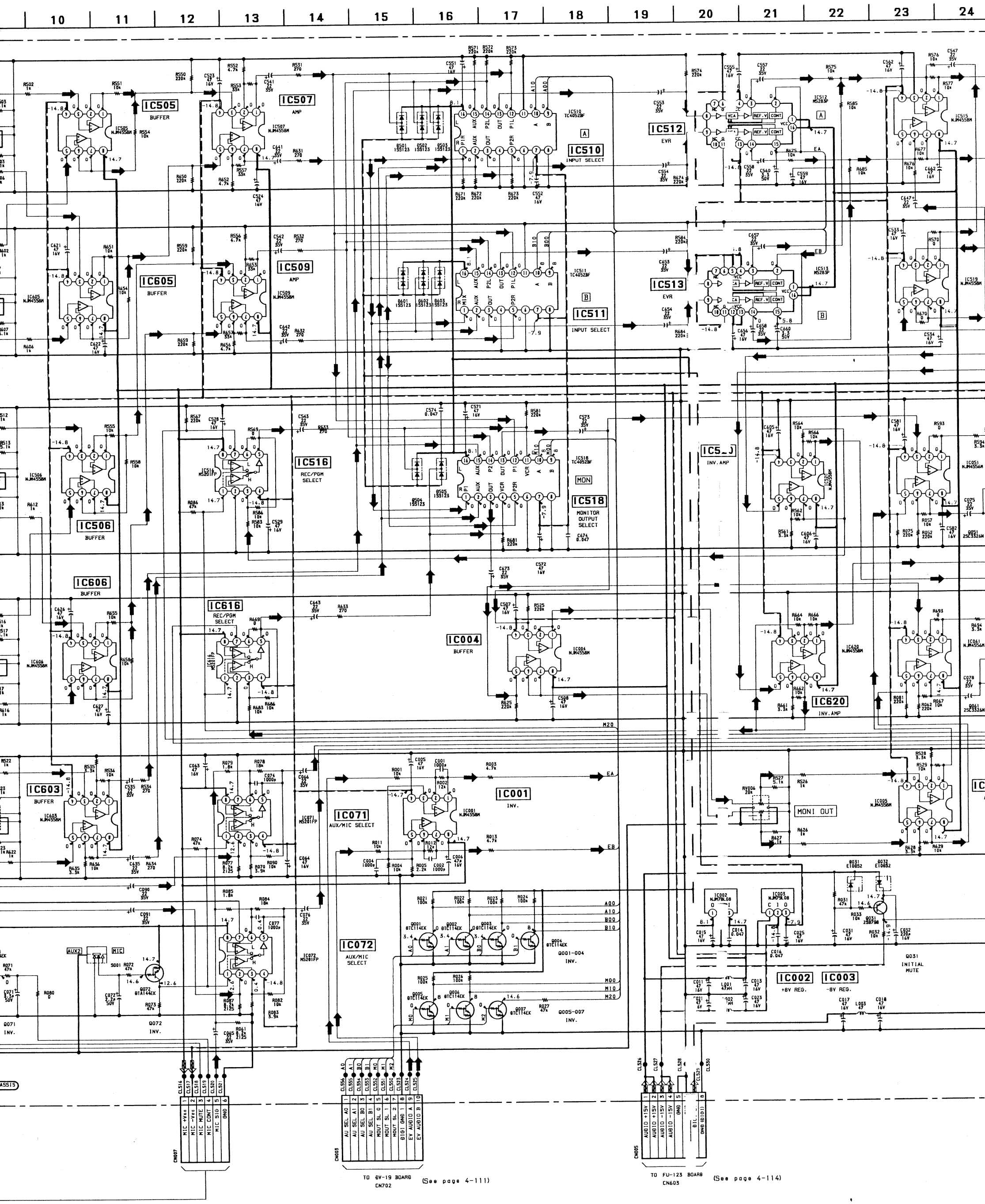
– Ref No. AM-32 BOARD : 1,000/ MJ-65 BOARD : 3,000/ AS-46 BOARD : 1,000 Seriese –



16

• **SIGNAL PATH (ANALOG)**

VIDEO SIGNAL			AUDIO SIGNAL
CHROMA	Y	Y/CHROMA	➡


10
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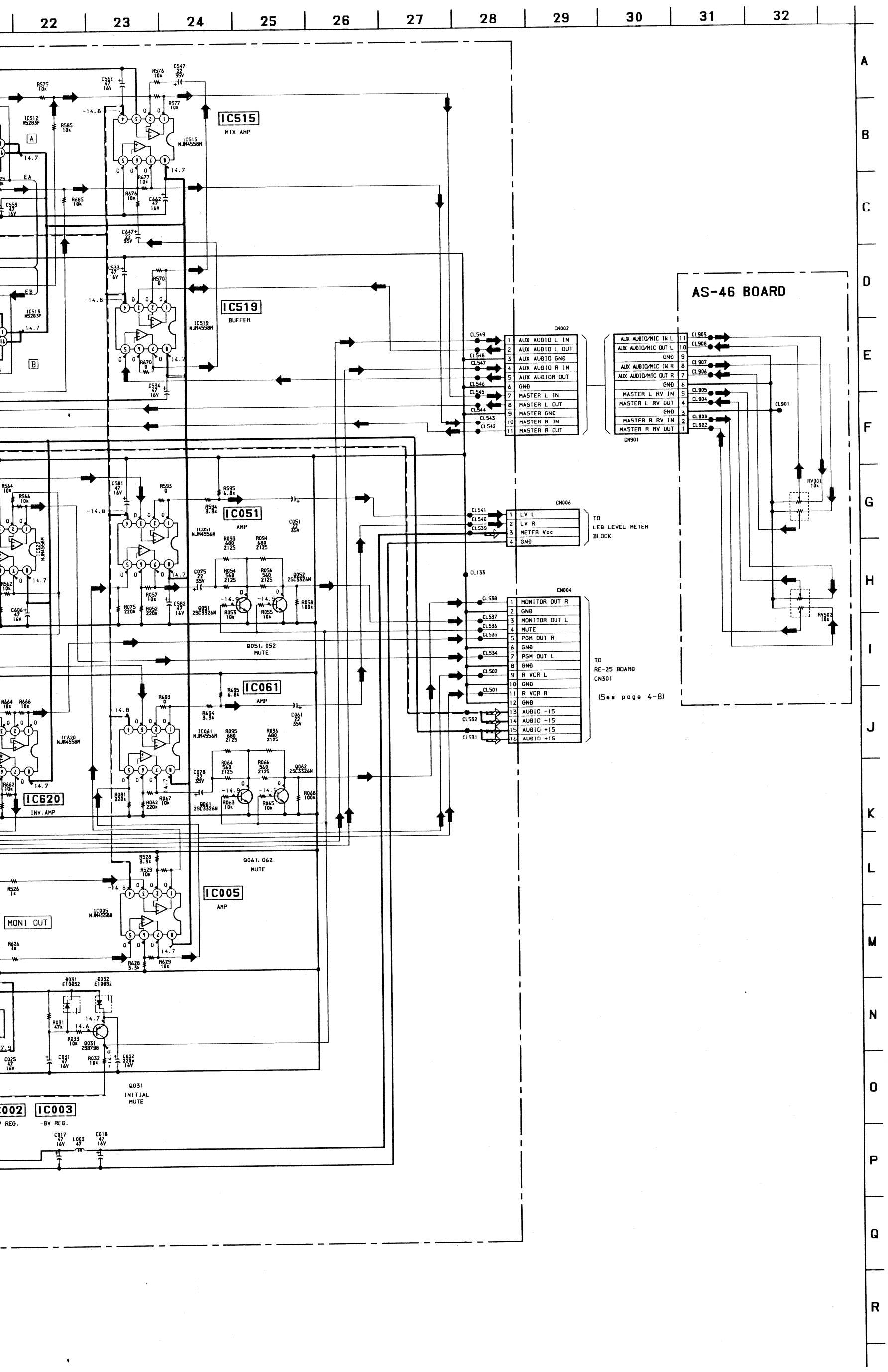
16
17
18
19
20
21
22
23
24
IC505
BUFFER
IC507
AMP
IC510
TC4052BF
INPUT SELECT
IC512
EVR
IC605
BUFFER
IC509
AMP
IC511
TC4052BF
INPUT SELECT
IC513
EVR
IC506
BUFFER
IC516
REC/PGM SELECT
IC518
TC4052BF
MONITOR OUTPUT SELECT
IC606
BUFFER
IC616
REC/PGM SELECT
IC004
BUFFER
IC620
INV. AMP
IC603
BUFFER
IC071
AUX/MIC SELECT
IC001
INV.
IC072
AUX/MIC SELECT
IC002
+8V REG.
IC003
-8V REG.
MONI OUT
INITIAL MUTE
Q071
INV.
Q072
INV.
Q001-004
INV.
Q005-007
INV.
CN007
MIC +Vcc
MIC -Vcc
MIC MUTE
MIC CONT
MIC SIG
GND
CN003
AU SEL A0
AU SEL A1
AU SEL B0
AU SEL B1
MOUT SL 0
MOUT SL 1
MOUT SL 2
B101 GND 1
EV AUDIO A
EV AUDIO B
CN005
AUDIO +15V
AUDIO +15V
AUDIO -15V
AUDIO -15V
GND
GND (B101)
TO 8V-19 BOARD
CN702
(See page 4-111)
TO FU-123 BOARD
CN603
(See page 4-114)


22
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A
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C
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E
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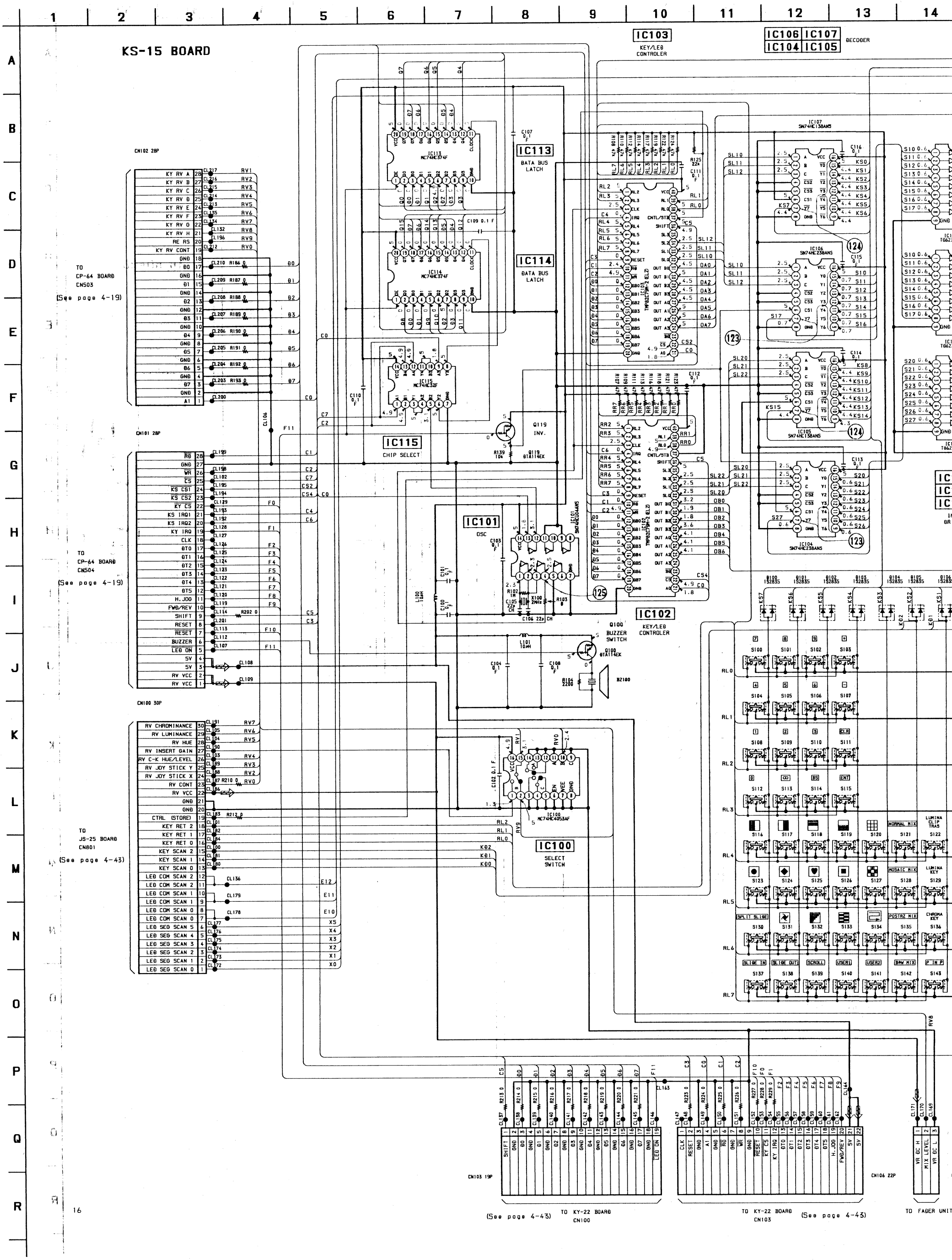
I
J
K
L
M
N
O
P
Q
R
IC515
MIX AMP
IC519
BUFFER
IC051
AMP
IC061
AMP
IC620
INV. AMP
IC005
AMP
IC002
+8V REG.
IC003
-8V REG.
Q051, 052
MUTE
Q061, 062
MUTE
Q031
INITIAL
MUTE
MONI OUT
AS-46 BOARD
CN002
1 AUX AUDIO L IN
2 AUX AUDIO L OUT
3 AUX AUDIO GND
4 AUX AUDIO R IN
5 AUX AUDIOR OUT
6 GND
7 MASTER L IN
8 MASTER L OUT
9 MASTER GND
10 MASTER R IN
11 MASTER R OUT
CN901
AUX AUDIO/MIC IN L 11
AUX AUDIO/MIC OUT L 10
GND 9
AUX AUDIO/MIC IN R 8
AUX AUDIO/MIC OUT R 7
GND 6
MASTER L RV IN 5
MASTER L RV OUT 4
GND 3
MASTER R RV IN 2
MASTER R RV OUT 1
CN006
1 LV L
2 LV R
3 METER Vcc
4 GND
TO
LEB LEVEL METER
BLOCK
CN004
1 MONITOR OUT R
2 GND
3 MONITOR OUT L
4 MUTE
5 PGM OUT R
6 GND
7 PGM OUT L
8 GND
9 R VCR L
10 GND
11 R VCR R
12 GND
13 AUDIO -15
14 AUDIO -15
15 AUDIO +15
16 AUDIO +15
TO
RE-25 BOARD
CN301
(See page 4-8)

KS-15 (KEY SEG) SCHEMATIC DIAGRAM

– Ref No. KS-15 BOARD : 3,000 Seriese –



Q103 105 107 109 111 113 115 117
LED SWITCH

CN105 6P
1 LED 5V
2 LED 5V
3 LED 5V
4 LED GND
5 LED GND
6 LED GND

TO
FU-123 BOARD
CN608
(See page 4-114)

TRANSRATE

VIDEO/AUDIO/FADE | T-TIME 100 | T-TIME 10 | T-TIME 1

WHITE FADE | LEVER PAUSE | BLACK FADE | REVERSE | AUTO TRANS / PAUSE | CUT

INPUT EFFECT | AUDIO FOLLOW

A-P1 | A-P2 | A-AUX | BKGD
B-P1 | B-P2 | B-AUX | BKGD

LUMINA CLIP TRANS | LUMINA KEY | CHROMA KEY | USER2 | USER1 | SCROLL | SLIDE OUT | SPLIT SLIDE | SLIDE IN

IC109 IC110 IC111
INV. DRIVER

IC112
INV. DRIVER

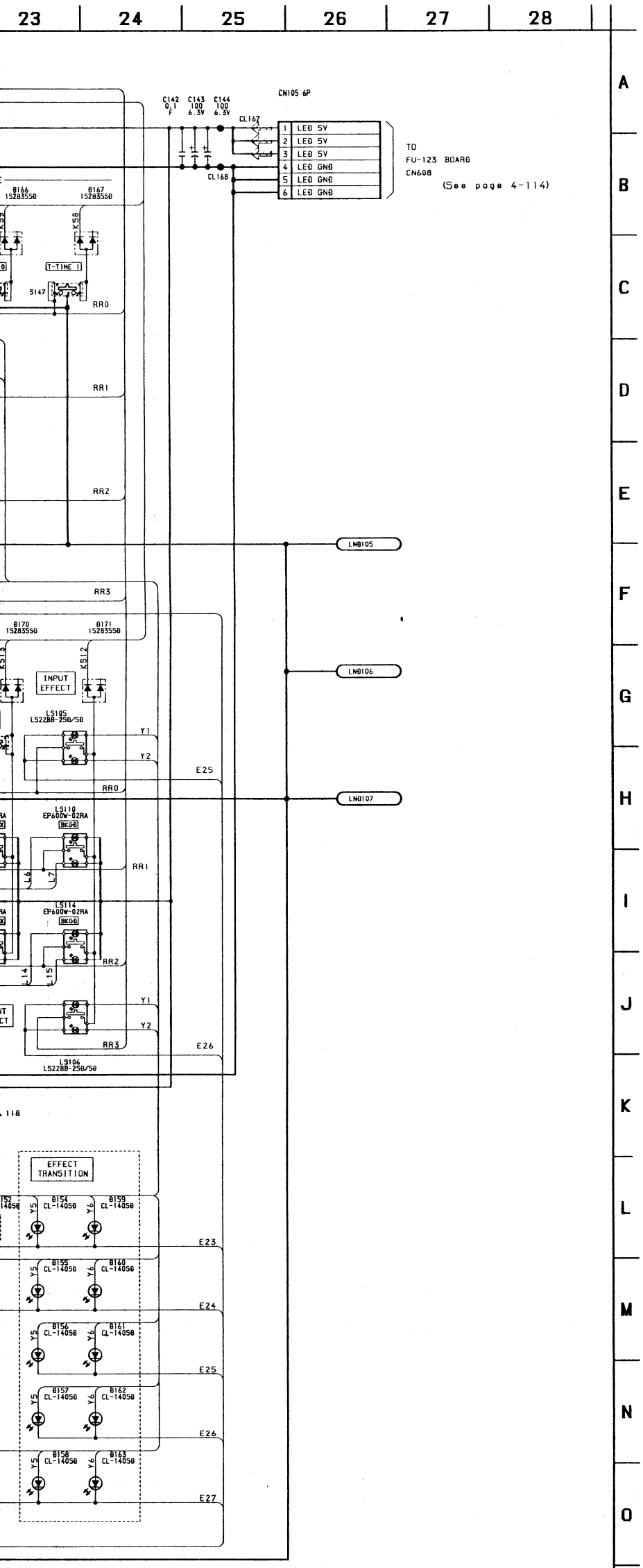
IC108
INV. DRIVER

Q106 108 110 112 114 116 118
LED SWITCH

EFFECT TRANSITION | VIDEO | FADE | AUDIO | COLOR BACKGROUND | AUTO TRANS

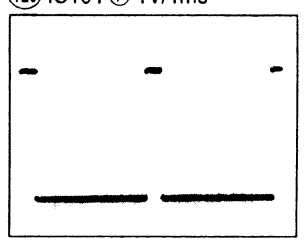
LN0105
LN0106
LN0107

CN106 22P
CN104 3P
TO FADER UNIT

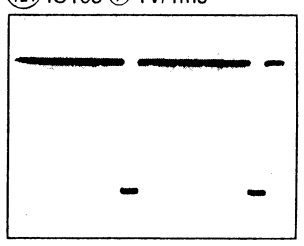


KS-15 board

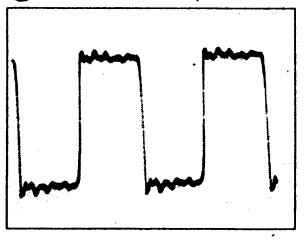
(123) IC104 ⑦ 1V/1ms



(124) IC105 ⑦ 1V/1ms



(125) IC101 ④ 1V/0.1μs

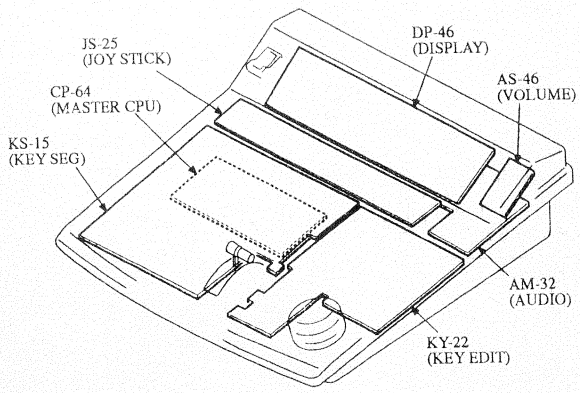


KS-15 (KEY SEG) PRINTED WIRING BOARD

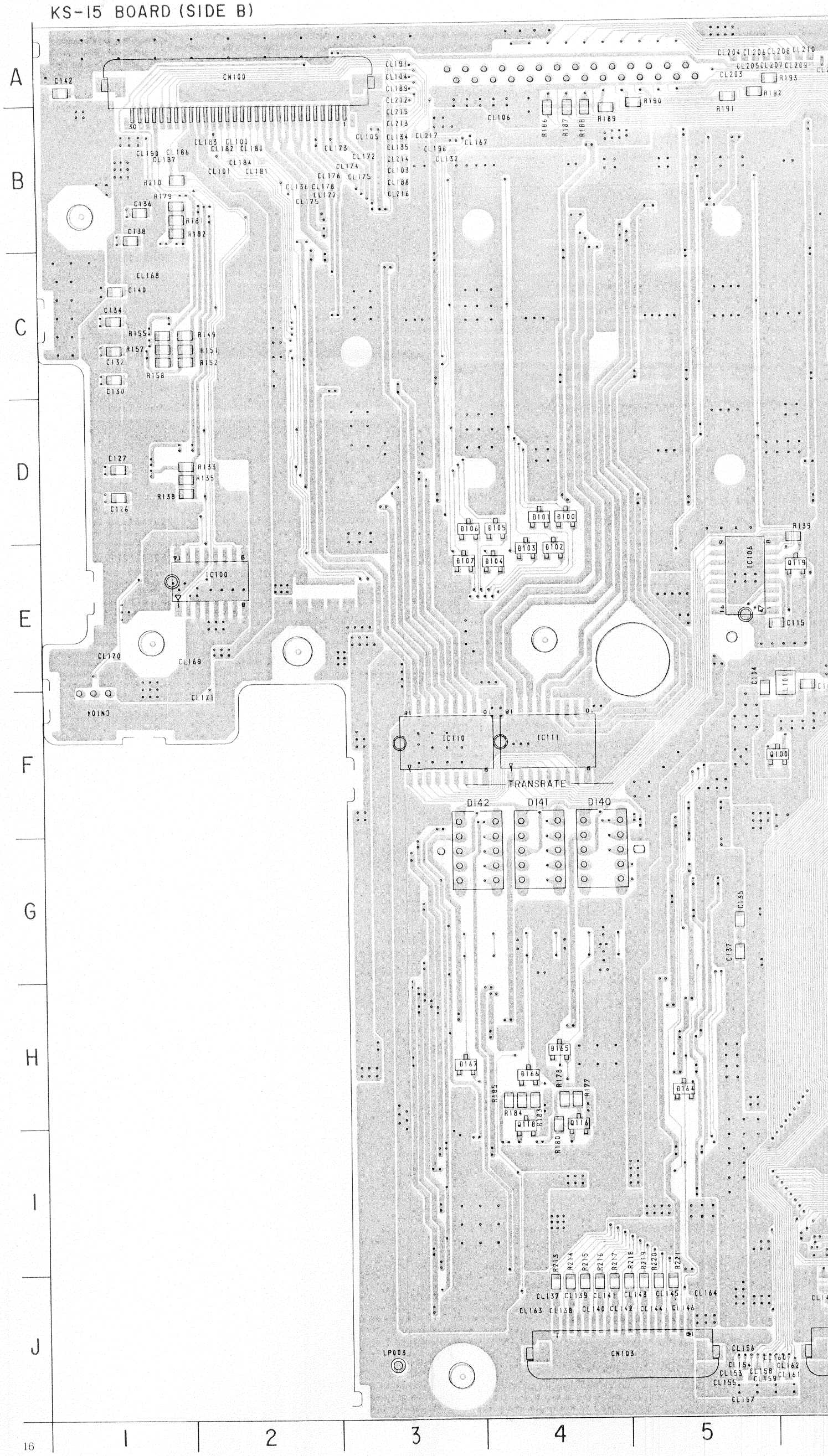
– Ref No. KS-15 BOARD : 3,000 Seriese –

KS-15 BOARD

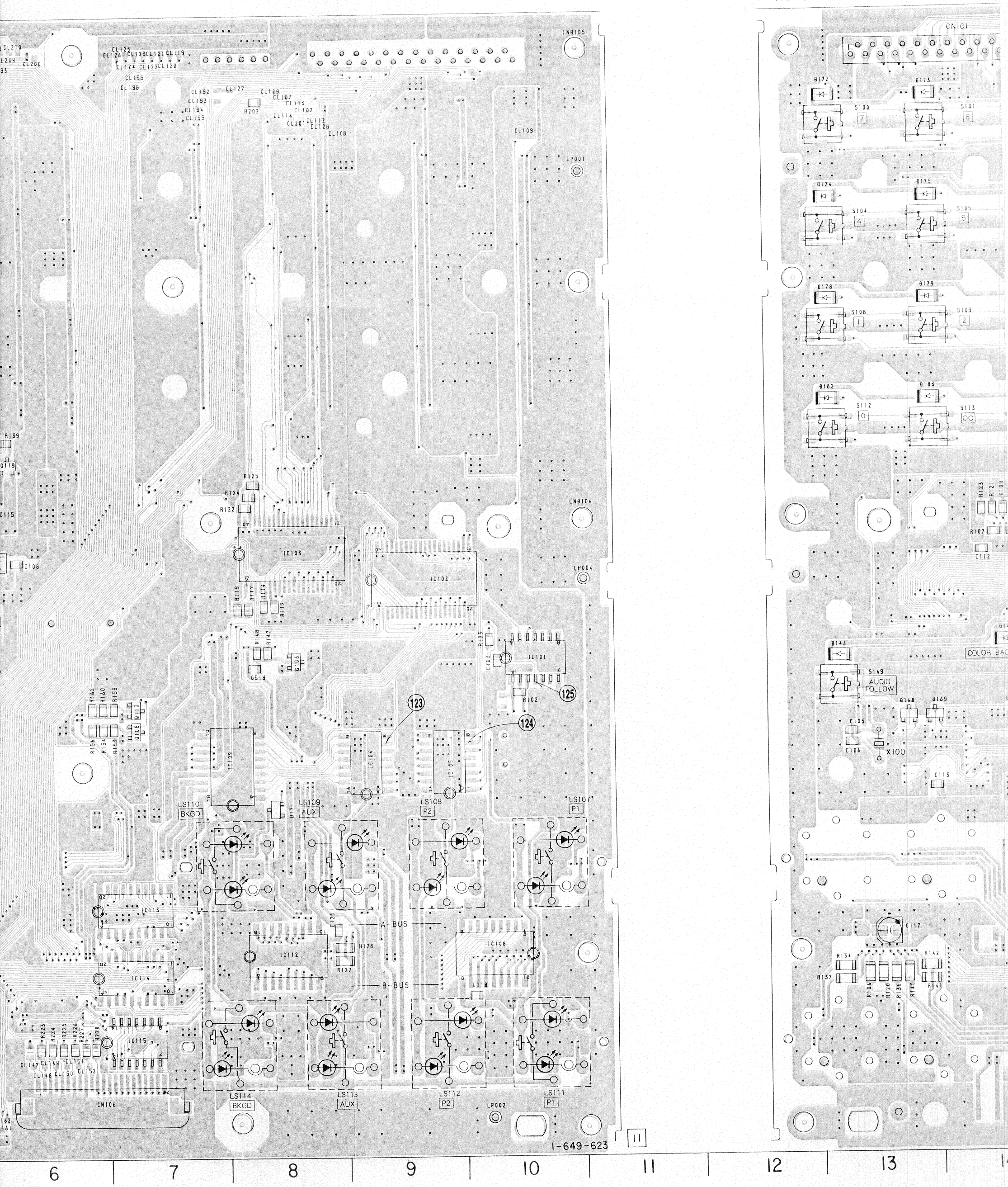
CN100	A-2	D190	C-21
CN101	A-14	D191	C-21
CN102	A-18	D192	C-21
CN103	J-4	D193	C-21
CN104	F-22	D194	D-21
CN105	A-15	D195	D-21
CN106	J-6	D196	B-20
		D197	B-20
D100	D-4	D198	C-20
D101	D-4	D199	D-20
D102	E-4	D200	B-19
D103	E-4	D201	B-19
D104	E-4	D202	C-19
D105	D-4	D203	D-19
D106	D-3	D204	B-18
D107	E-7	D205	C-18
D108	B-14	D206	C-18
D109	B-15	D207	D-18
D140	F-4	D208	B-17
D141	F-4	D209	B-17
D142	F-3	D210	C-17
D143	F-13	D211	D-17
D144	F-14	D212	B-16
D147	F-17	D213	C-16
D148	F-18	D214	C-16
D149	G-17	D215	D-16
D150	G-18		
D151	G-17	IC100	E-1
D152	G-18	IC101	F-10
D153	J-19	IC102	F-9
D154	G-20	IC103	E-8
D155	G-20	IC104	G-9
D156	G-20	IC105	G-9
D157	H-20	IC106	E-5
D158	H-20	IC107	E-19
D159	H-20	IC108	I-10
D160	I-20	IC109	G-7
D161	I-20	IC110	F-3
D162	I-20	IC111	F-4
D163	J-20	IC112	I-8
D164	H-5	IC113	H-7
D165	H-4	IC114	I-7
D166	H-4	IC115	J-7
D167	H-3		
D168	G-13	Q100	F-6
D169	G-13	Q103	D-22
D170	G-14	Q105	D-22
D171	H-8	Q106	F-8
D172	B-13	Q107	C-22
D173	B-13	Q108	G-7
D174	C-13	Q109	C-22
D175	C-13	Q110	G-7
D176	C-14	Q111	C-22
D177	B-15	Q112	G-17
D178	D-13	Q113	B-22
D179	C-13	Q114	G-17
D180	C-14	Q115	B-22
D181	C-15	Q116	I-4
D182	D-13	Q117	C-22
D183	D-13	Q118	I-4
D184	D-14	Q119	E-6
D185	D-15		
D188	B-21		
D189	B-21		



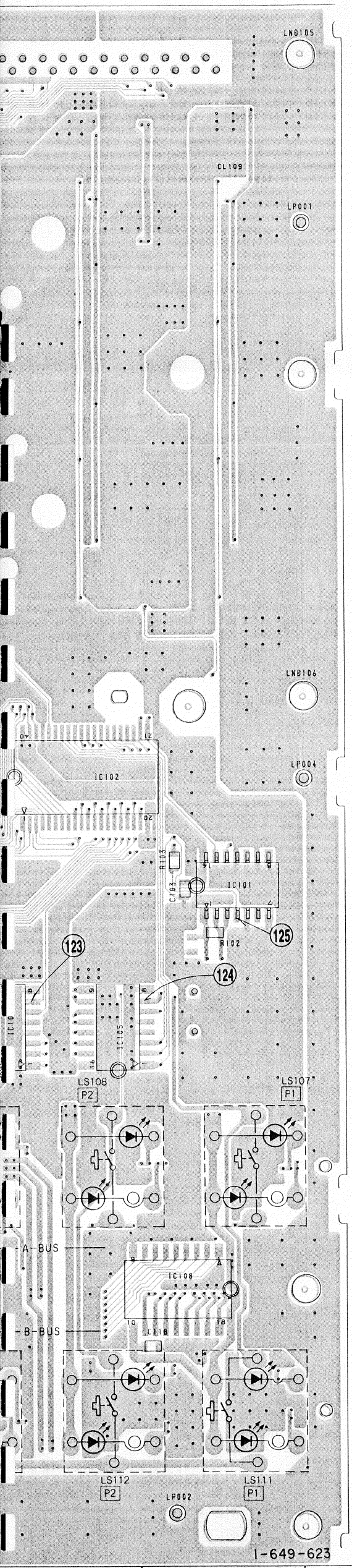
KS-15 BOARD (SIDE B)

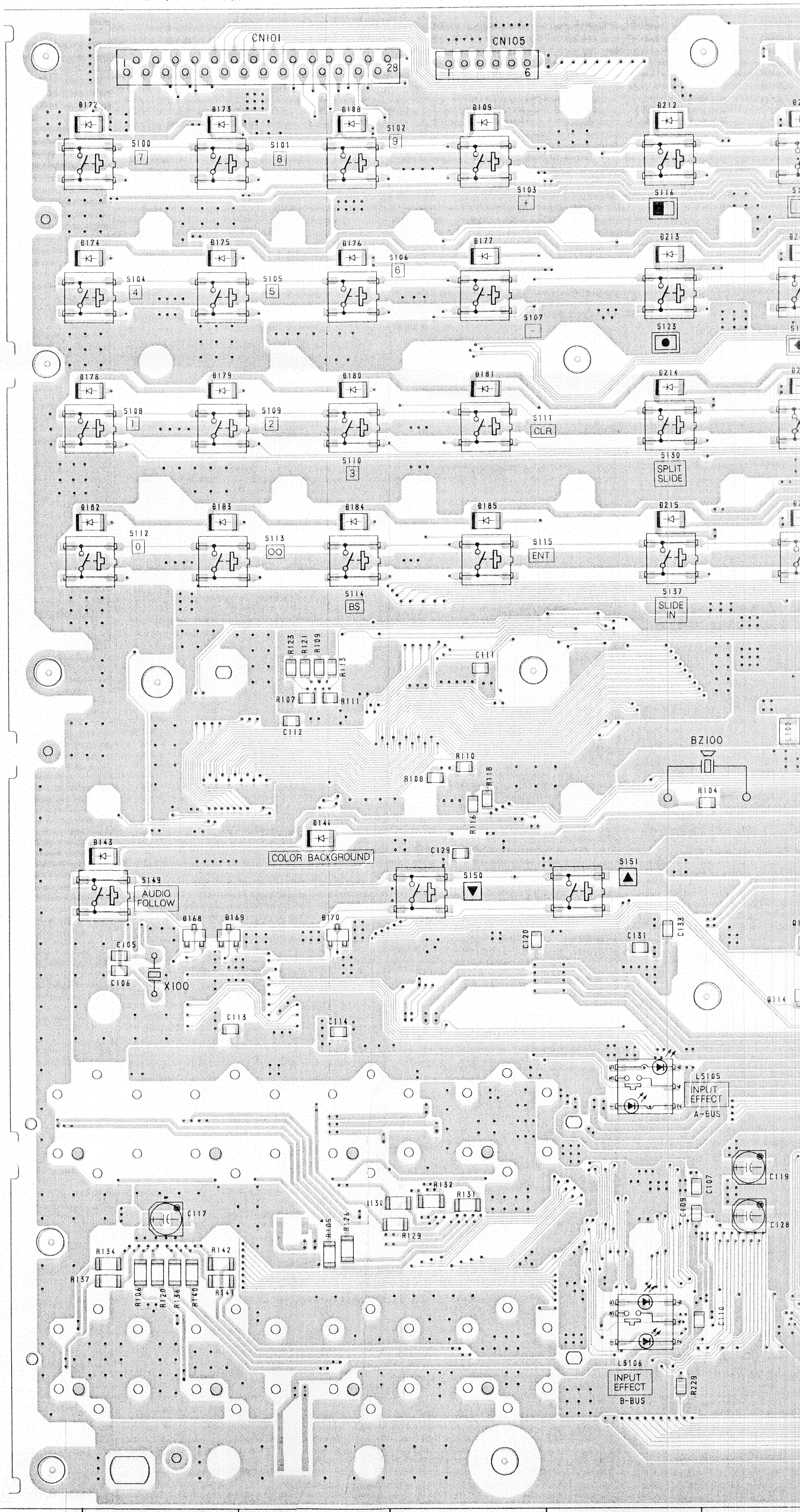


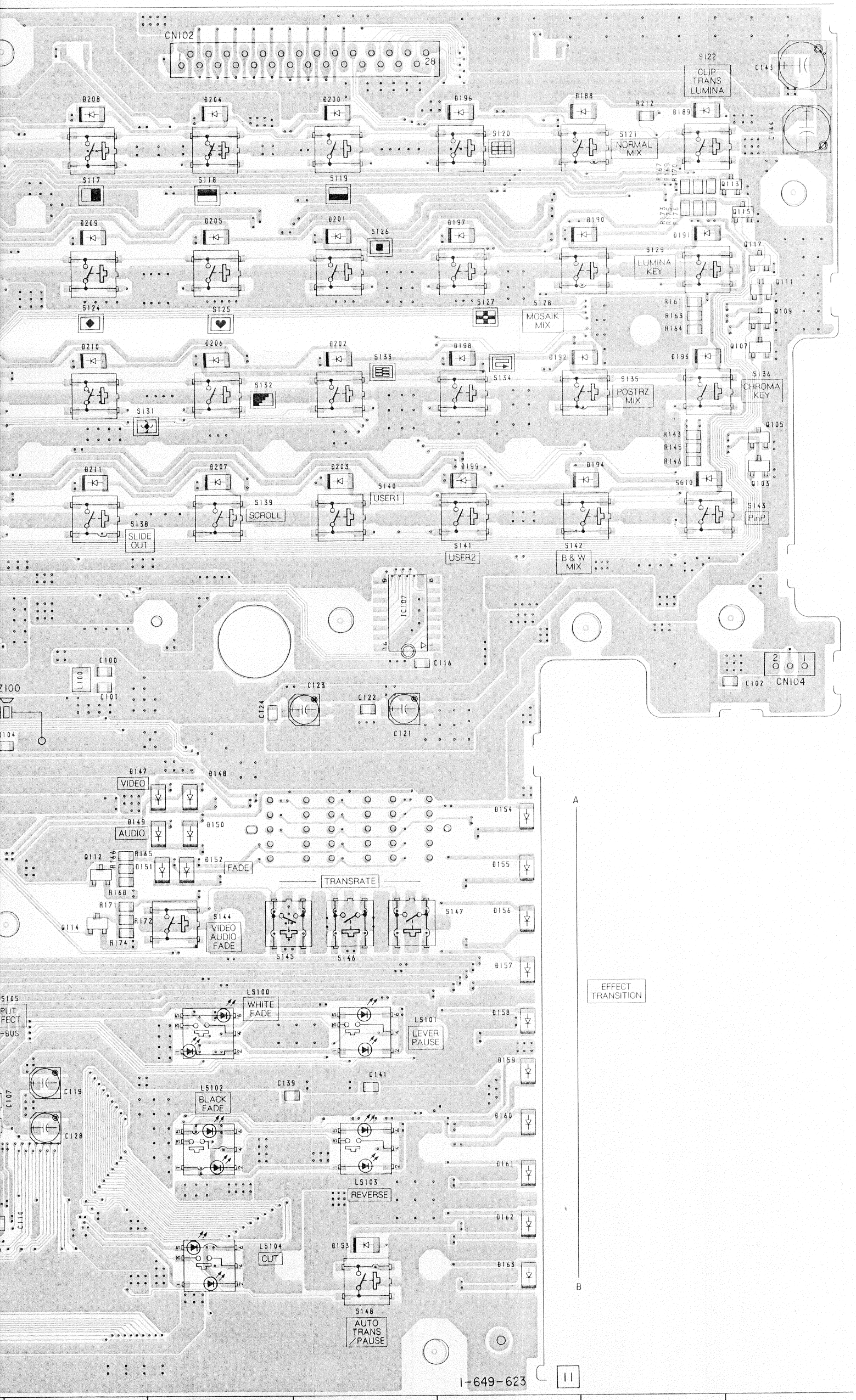
KS-15 BOARD (SIDE A)



KS-15 BOARD (SIDE A)






CN102
1
28
D208
D204
D200
D196
D188
S120
S121
NORMAL MIX
S122
CLIP TRANS LUMINA
C143
C144
R212
D189
S117
S118
S119
R167
R169
R170
Q113
Q115
D209
D205
D201
S126
D197
D190
D191
Q117
S129
LUMINA KEY
Q111
S124
S125
S127
S128
MOSAIK MIX
R161
R163
R164
Q109
D210
D206
D202
S133
D198
D192
D193
Q107
S136
CHROMA KEY
S132
S134
S135
POSTRZ MIX
S131
Q105
R143
R145
R146
D211
D207
D203
S140
USER1
D199
D194
S610
Q103
S143
PinP
S139
SCROLL
S138
SLIDE OUT
S141
USER2
S142
B & W MIX
IC102
C116
C100
C101
L100
C123
C124
C122
C121
CN104
C102
D147
VIDEO
D148
D149
AUDIO
D150
D154
Q112
R165
R166
D151
D152
FADE
D155
TRANSRATE
R168
R171
R172
Q114
R174
S144
VIDEO AUDIO FADE
S145
S146
S147
D156
D157
LS100
WHITE FADE
LS101
LEVER PAUSE
D158
D159
C141
C139
C119
C128
C107
LS102
BLACK FADE
D160
D161
LS103
REVERSE
C110
D162
LS104
CUT
D153
D163
S148
AUTO TRANS /PAUSE
S105
PUT
FECT
-BUS
EFFECT TRANSITION
A
B
I-649-623
11
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KEY SEG

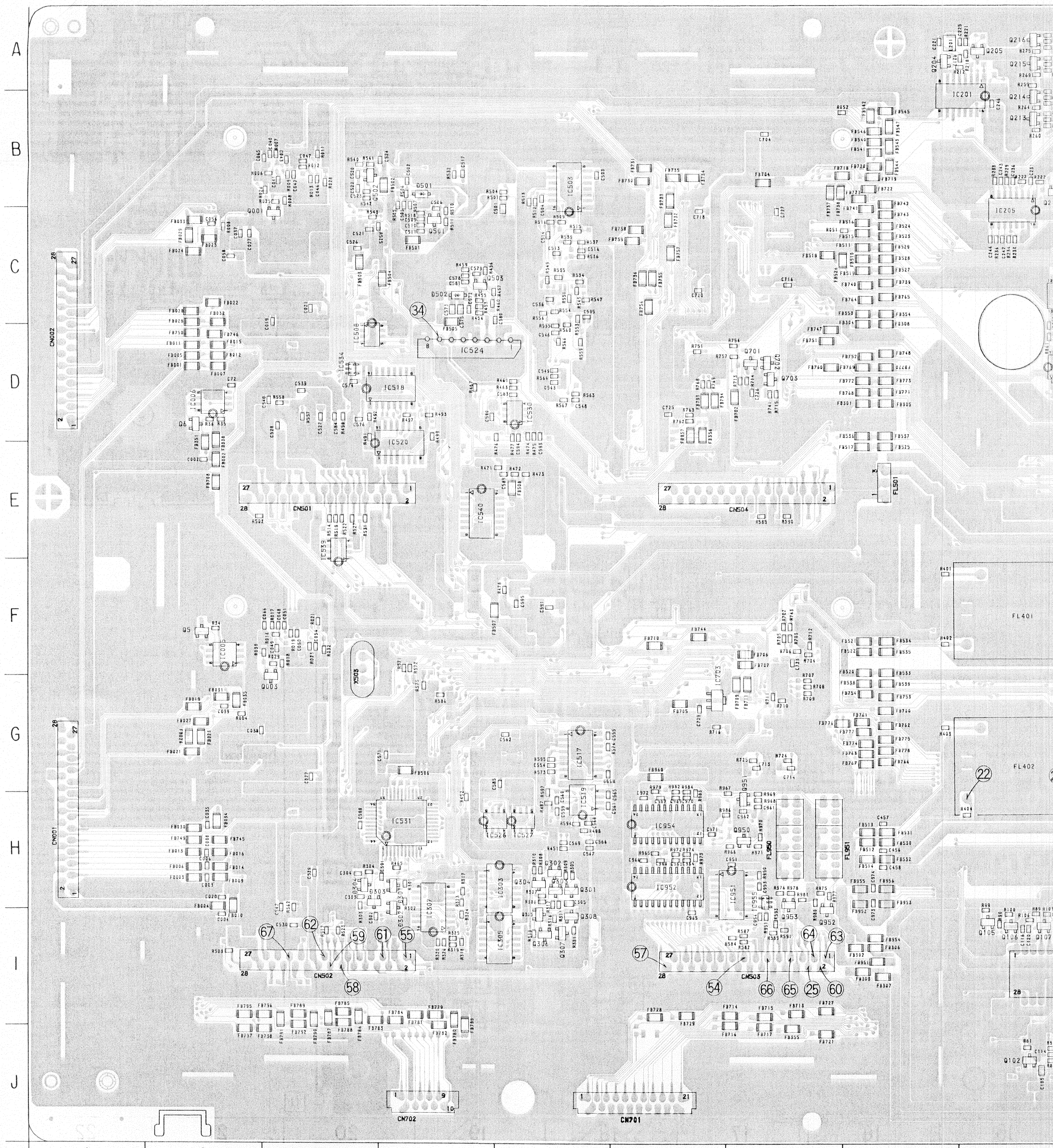
DV-19 BOARD

CN001	G-1	D102	H-18	IC004	G-24	IC203	B-10	IC404	F-10	IC512	H-25	IC527	H-5
CN002	C-1	D103	I-16	IC005	F-2I	IC204	B-10I	IC405	F-10	IC513	H-25	IC528	D-24
CN201	A-10	D104	H-18	C006	D-2	C205	C-9	IC406	G-10	IC514	D-22	IC529	G-23
CN501	E-3	D301	H-4	IC101	I-18	IC206	B-10	IC407	H-10	IC515	G-22	IC530	D-5
CN502	I-3	D302	H-4	IC102	J-17	IC207	C-18	IC501	B-22	IC516	F-23	IC531	H-4
CN503	I-7	D303	H-3	IC103	J-18	IC301	H-24	IC502	D-22	IC517	G-5	IC532	D-23
CN504	E-6	D304	H-3	IC104	I-9	IC302	H-23	IC503	B-5	IC518	D-4	IC533	E-23
CN601	A-12	D305	I-22	IC105	J-10	IC303	H-5	IC504	B-24	IC519	H-5	IC534	D-3
CN602	D-13	D501	B-4	IC106	J-10	IC304	H-22	IC505	C-22	IC520	E-4	IC535	F-22
CN701	J-6	D502	C-4	IC107	I-10	IC305	I-5	IC506	C-22	IC521	H-22	IC536	E-23
CN702	J-4	D602	E-17	IC108	J-11	IC307	H-4	IC507	C-24	IC522	G-23	IC537	D-23
				IC109	I-10	IC308	H-23	IC508	D-3	IC523	D-24	IC539	E-3
D001	F-24	IC001	D-24	IC110	I-16	IC401	G-18	IC509	D-24	IC524	D-4	IC540	E-5
D002	B-24	IC002	G-24	IC201	A-9	IC402	G-18	IC510	D-25	IC525	G-23	IC541	E-23
D101	J-16	IC003	C-24	IC202	C-19	IC403	H-17	IC511	G-22	IC526	H-5	IC542	E-23

DV-19 (VIDEO) PRINTED WIRING BOARD

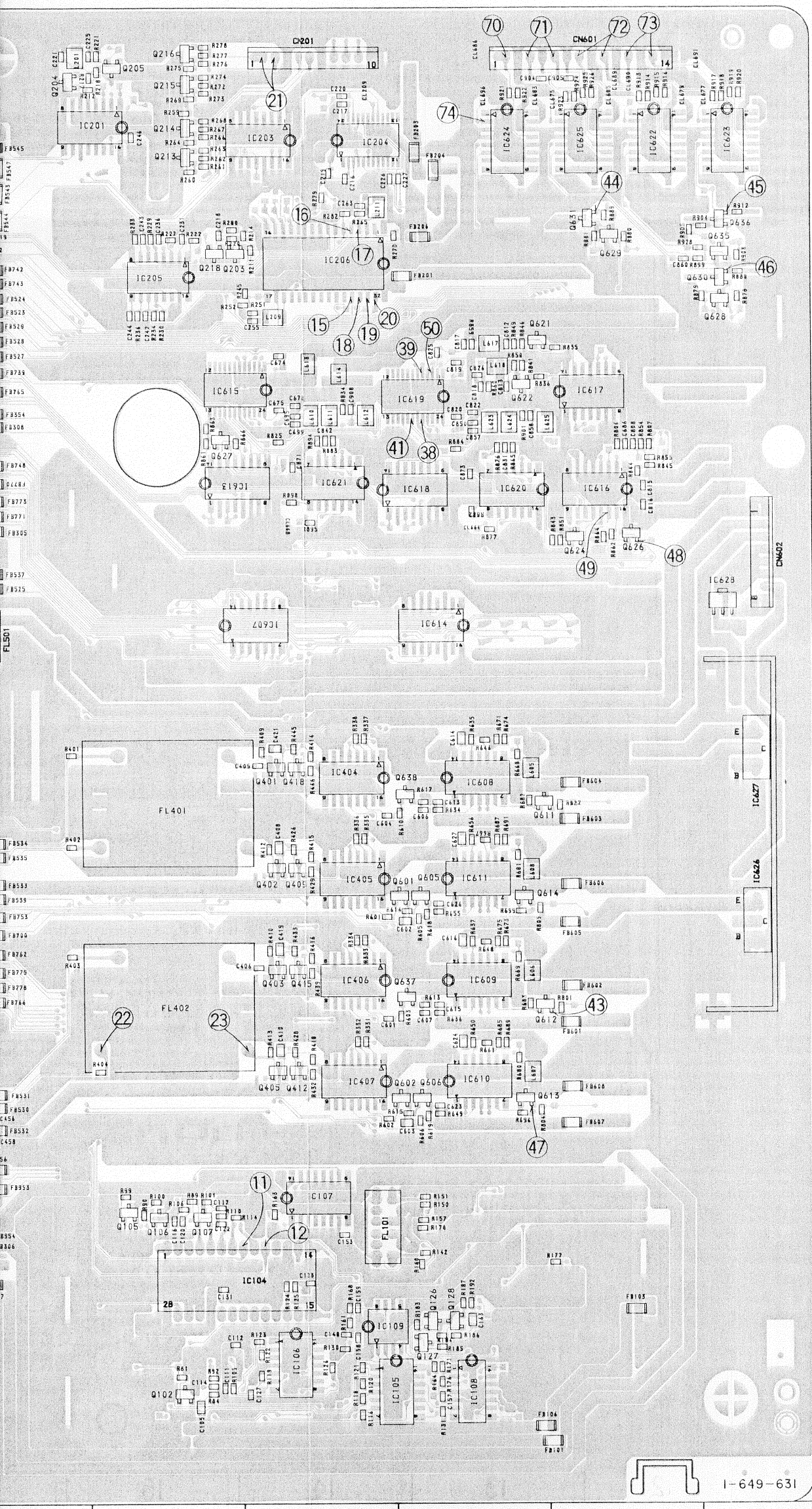
– Ref No. DV-19 BOARD : 7,000 Seriese –

DV-19 BOARD (SIDE A)



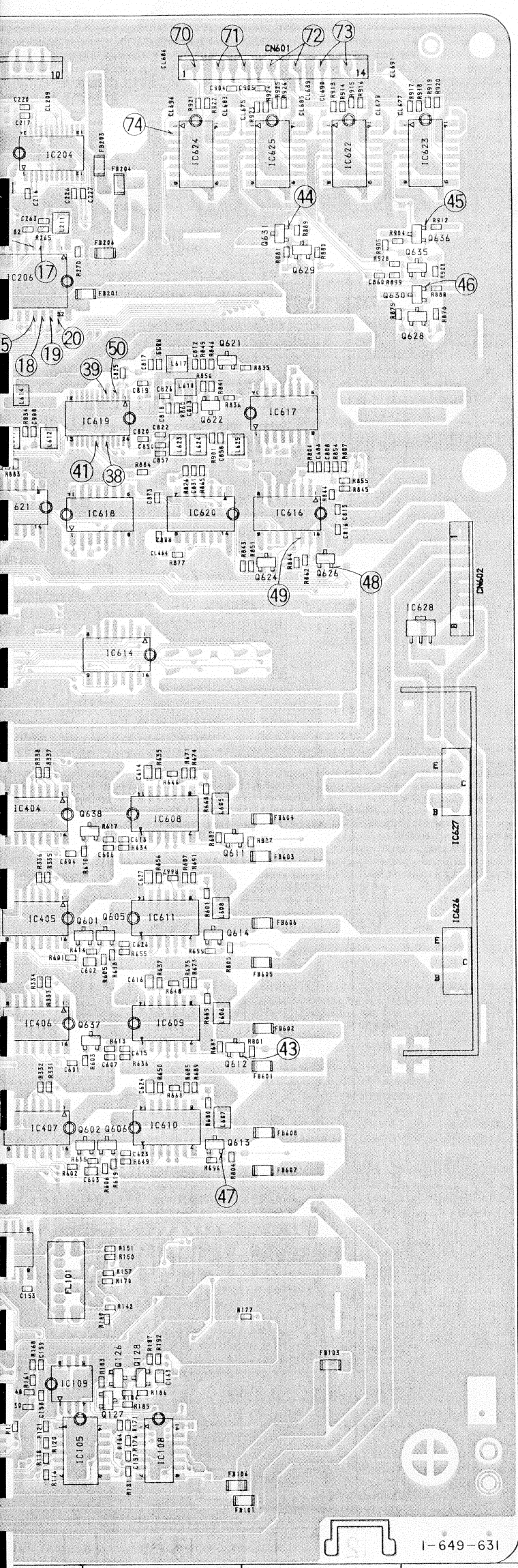
H-25	IC527	H-5	IC543	E-23	IC616	D-12	IC703	G-6	Q001	C-3	Q110	J-17	Q125	I-16	Q209	A-18
H-25	IC528	D-24	IC602	E-16	IC617	C-12	IC704	D-21	Q002	D-24	Q111	J-17	Q126	I-11	Q210	A-17
D-22	IC529	G-23	IC603	E-17	IC618	D-11	IC705	C-21	Q003	G-3	Q112	J-17	Q127	I-11	Q211	A-18
G-22	IC530	D-5	IC604	E-17	IC619	C-11	IC706	D-21	Q004	F-24	Q113	J-17	Q128	I-11	Q212	A-18
F-23	IC531	H-4	IC605	E-16	IC620	D-11	IC707	C-21	Q005	F-2	Q114	J-17	Q129	I-16	Q213	B-9
G-5	IC532	D-23	IC606	E-17	IC621	D-10	IC709	G-20	Q006	D-2	Q115	J-17	Q130	I-16	Q214	B-9
D-4	IC533	E-23	IC607	E-10	IC622	B-12	IC710	G-20	Q101	J-18	Q116	H-17	Q131	I-16	Q215	A-9
H-5	IC534	D-3	IC608	F-11	IC623	B-13	IC711	D-21	Q102	J-9	Q117	H-17	Q201	A-17	Q216	A-9
E-4	IC535	F-22	IC609	G-11	IC624	B-11	IC730	F-21	Q103	J-18	Q118	J-16	Q203	B-9	Q217	B-17
H-22	IC536	E-23	IC610	H-11	IC625	B-12	IC950	H-21	Q104	J-18	Q119	I-17	Q202	A-17	Q218	B-9
G-23	IC537	D-23	IC611	F-11	IC626	G-13	IC951	H-7	Q105	I-9	Q120	H-16	Q204	A-8	Q219	B-17
D-24	IC539	E-3	IC612	E-18	IC627	E-13	IC952	H-6	Q106	I-9	Q121	I-17	Q205	A-9	Q301	H-5
D-4	IC540	E-5	IC613	D-9	IC628	E-13	IC954	H-6	Q107	I-9	Q122	I-16	Q206	A-19	Q302	H-5
G-23	IC541	E-23	IC614	E-11	IC629	E-17	IC955	H-7	Q108	J-18	Q123	I-16	Q207	B-17	Q303	H-5
H-5	IC542	E-23	IC615	C-9	IC701	B-20			Q109	J-17	Q124	I-16	Q208	B-17	Q304	H-5

DV-19 BOARD (SIDE B)

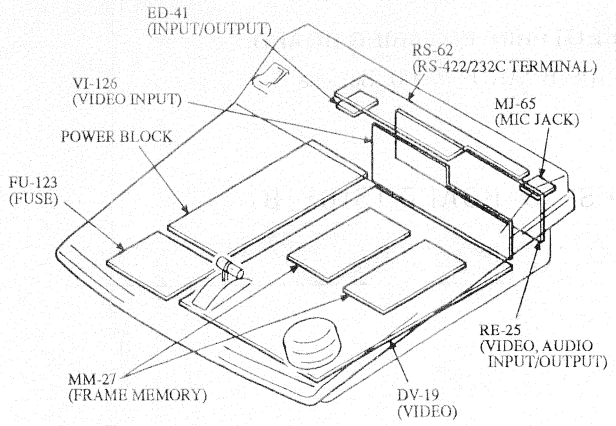


3	IC616	D-12	IC703	G-6	Q001	C-3	Q110	J-17	Q125	I-16	Q209	A-18	Q305	I-5	Q410	G-17	Q604	H-17	Q619
6	IC617	C-12	IC704	D-21	Q002	D-24	Q111	J-17	Q126	I-11	Q210	A-17	Q306	I-5	Q411	G-17	Q605	G-11	Q620
7	IC618	D-11	IC705	C-21	Q003	G-3	Q112	J-17	Q127	I-11	Q211	A-18	Q307	I-5	Q412	H-10	Q606	H-11	Q621
7	IC619	C-11	IC706	D-21	Q004	F-24	Q113	J-17	Q128	I-11	Q212	A-18	Q308	I-5	Q413	G-17	Q607	G-16	Q622
6	IC620	D-11	IC707	C-21	Q005	F-2	Q114	J-17	Q129	I-16	Q213	B-9	Q309	I-22	Q414	G-17	Q608	H-16	Q623
7	IC621	D-10	IC709	G-20	Q006	D-2	Q115	J-17	Q130	I-16	Q214	B-9	Q310	I-22	Q415	G-10	Q609	C-18	Q624
0	IC622	B-12	IC710	G-20	Q101	J-18	Q116	H-17	Q131	I-16	Q215	A-9	Q401	F-10	Q416	G-17	Q610	D-18	Q625
1	IC623	B-13	IC711	D-21	Q102	J-9	Q117	H-17	Q201	A-17	Q216	A-9	Q402	F-10	Q417	F-17	Q611	F-11	Q626
1	IC624	B-11	IC730	F-21	Q103	J-18	Q118	J-16	Q203	B-9	Q217	B-17	Q403	G-10	Q418	F-10	Q612	G-11	Q627
1	IC625	B-12	IC950	H-21	Q104	J-18	Q119	I-17	Q202	A-17	Q218	B-9	Q404	G-17	Q501	C-4	Q613	H-11	Q628
1	IC626	G-13	IC951	H-7	Q105	I-9	Q120	H-16	Q204	A-8	Q219	B-17	Q405	H-10	Q502	B-4Q	Q614	G-11	Q629
8	IC627	E-13	IC952	H-6	Q106	I-9	Q121	I-17	Q205	A-9	Q301	H-5	Q406	F-17	503	C-4	Q615	D-15	Q630
9	IC628	E-13	IC954	H-6	Q107	I-9	Q122	I-16	Q206	A-19	Q302	H-5	Q407	G-17	Q601	G-11	Q616	D-15	Q631
1	IC629	E-17	IC955	H-7	Q108	J-18	Q123	I-16	Q207	B-17	Q303	H-5	Q408	H-17	Q602	H-11	Q617	D-15	Q632
9	IC701	B-20			Q109	J-17	Q124	I-16	Q208	B-17	Q304	H-5	Q409	F-10	Q603	G-17	Q618	C-16	Q633

DV-19 BOARD (SIDE B)



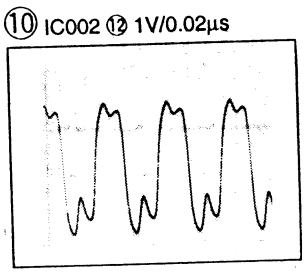
Q619	D-16	Q634	D-17	Q953	H-7
Q620	D-15	Q635	B-13		
Q621	C-11	Q636	B-13		
Q622	C-11	Q637	G-11		
Q623	D-17	Q638	F-11		
Q624	D-12	Q639	E-17		
Q625	D-17	Q640	E-16		
Q626	D-12	Q641	E-17		
Q627	D-9	Q642	E-16		
Q628	C-13	Q701	D-7		
Q629	B-12	Q702	D-7		
Q630	B-13	Q703	D-7		
Q631	B-12	Q950	H-7		
Q632	D-16	Q951	H-7		
Q633	D-16	Q952	H-7		



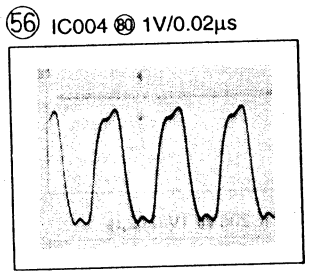
DV-19 (1/7) (VIDEO (1/7)) SCHEMATIC DIAGRAM

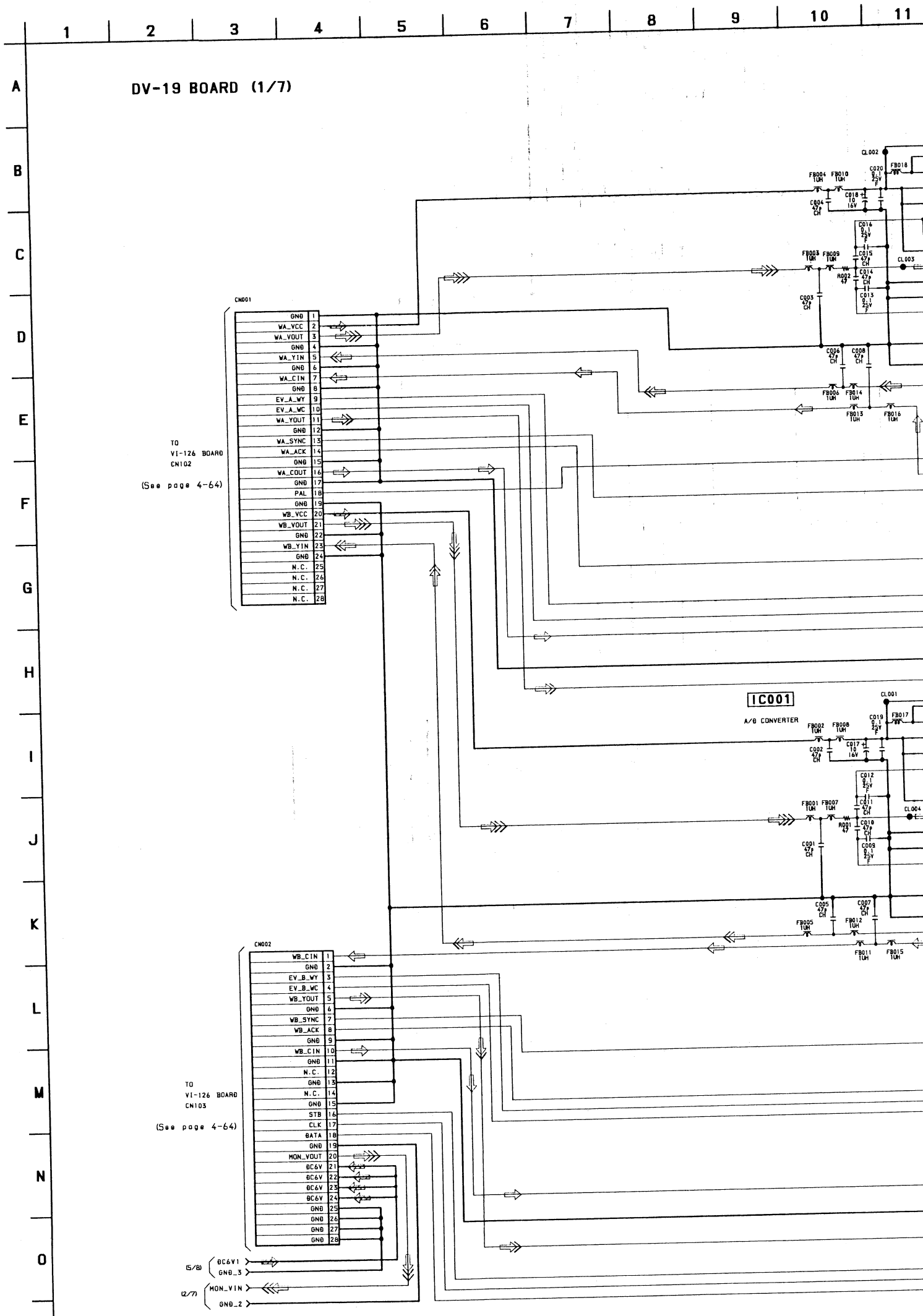
– Ref No. DV-19 BOARD : 7,000 Seriese –

⑩ IC002 ⑫ 1V/0.02µs



⑤⑥ IC004 ⑧⑩ 1V/0.02µs

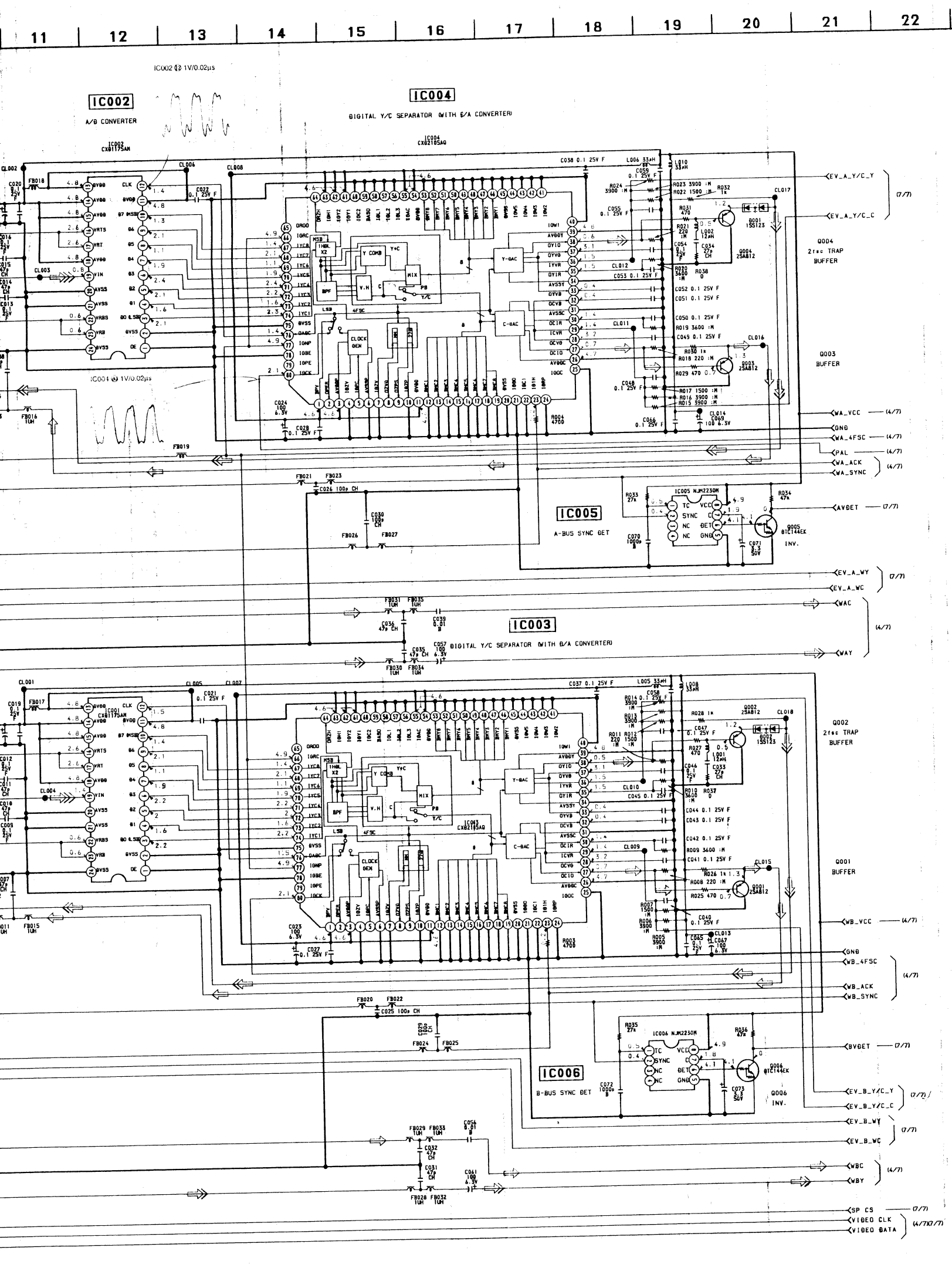




16

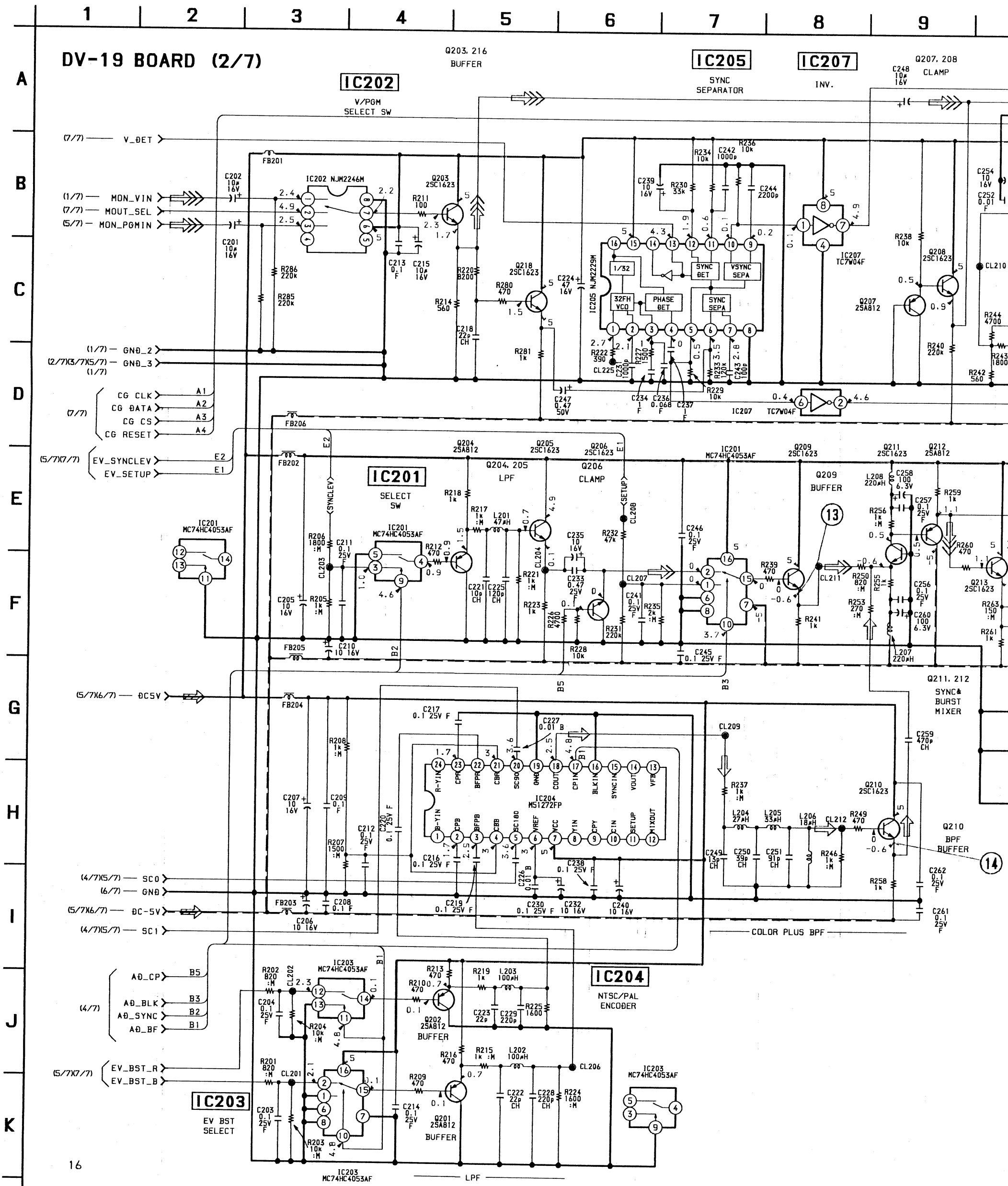
• **SIGNAL PATH (ANALOG)**

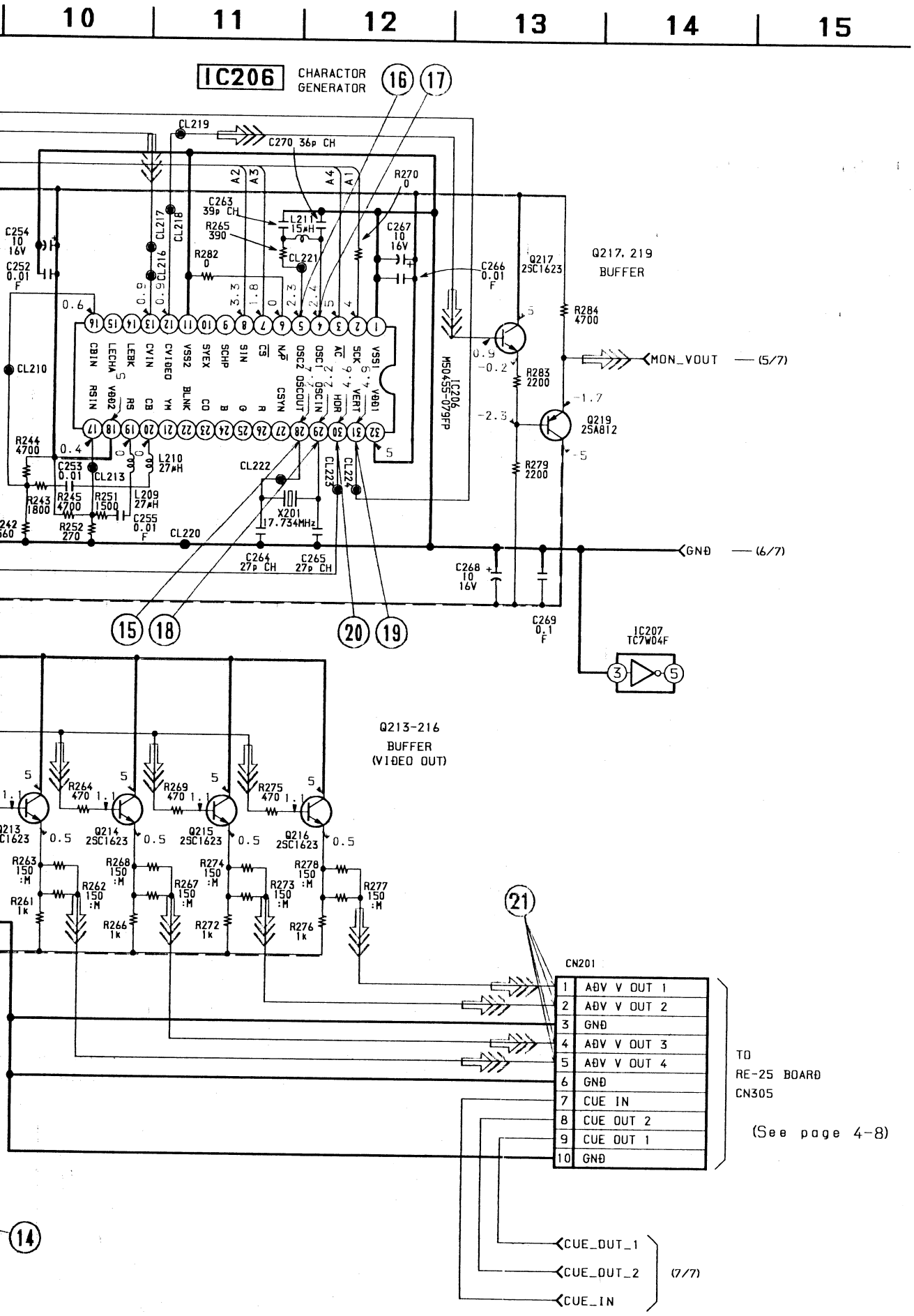
VIDEO SIGNAL			AUDIO SIGNAL
CHROMA	Y	Y/CHROMA	
⇨	⇨	⇨	

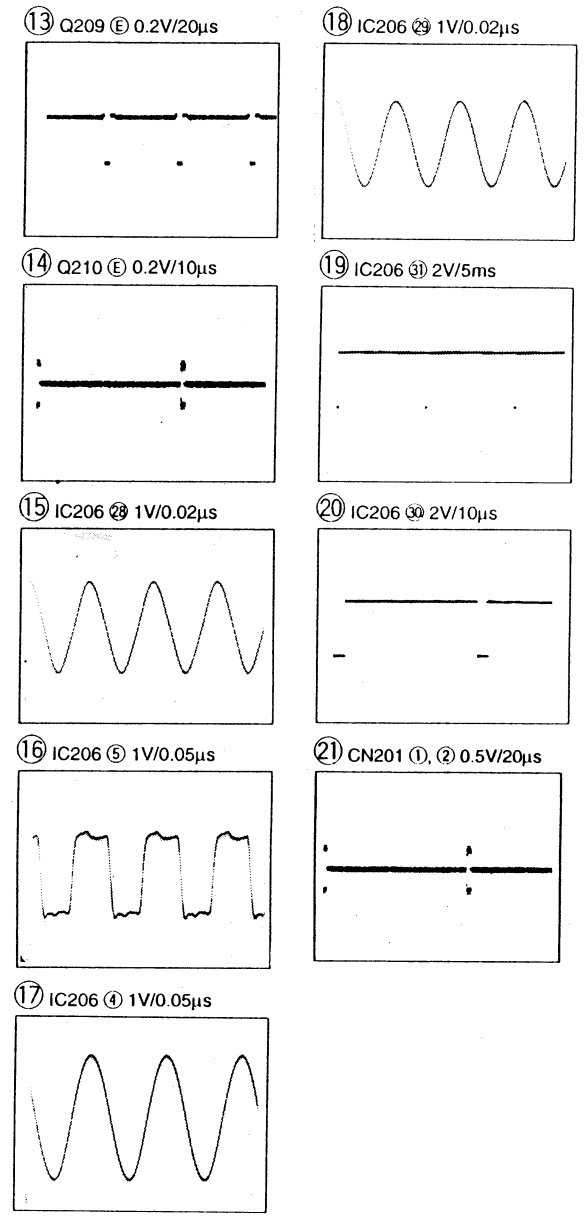

IC002
A/B CONVERTER
IC002 CX81175AM
IC002 @ 1V/0.02µs
IC001 @ 1V/0.02µs
IC004
BIGITAL Y/C SEPARATOR (WITH B/A CONVERTER)
IC004 CX82105AQ
IC005
A-BUS SYNC DET
IC005 NJM2230M
IC003
BIGITAL Y/C SEPARATOR (WITH B/A CONVERTER)
IC003 CX82105AQ
IC006
B-BUS SYNC DET
IC006 NJM2230M
Q004 2fsc TRAP BUFFER
Q003 BUFFER
Q002 2fsc TRAP BUFFER
Q001 BUFFER
Q005 BTC144EK INV.
Q006 BTC144EK INV.
EV_A_Y/C_Y
EV_A_Y/C_C
WA_VCC
GND
WA_4FSC
PAL
WA_ACK
WA_SYNC
AVDET
EV_A_WY
EV_A_WC
WAC
WAY
WB_VCC
WB_4FSC
WB_ACK
WB_SYNC
BVDET
EV_B_Y/C_Y
EV_B_Y/C_C
EV_B_WY
EV_B_WC
WBC
WBY
SP CS
VIDEO CLK
VIDEO DATA

DV-19 (2/7) (VIDEO (2/7)) SCHEMATIC DIAGRAM • See page 4-82 for PRINTED WIRING BOARD

– Ref No. DV-19 BOARD : 7,000 Seriese –







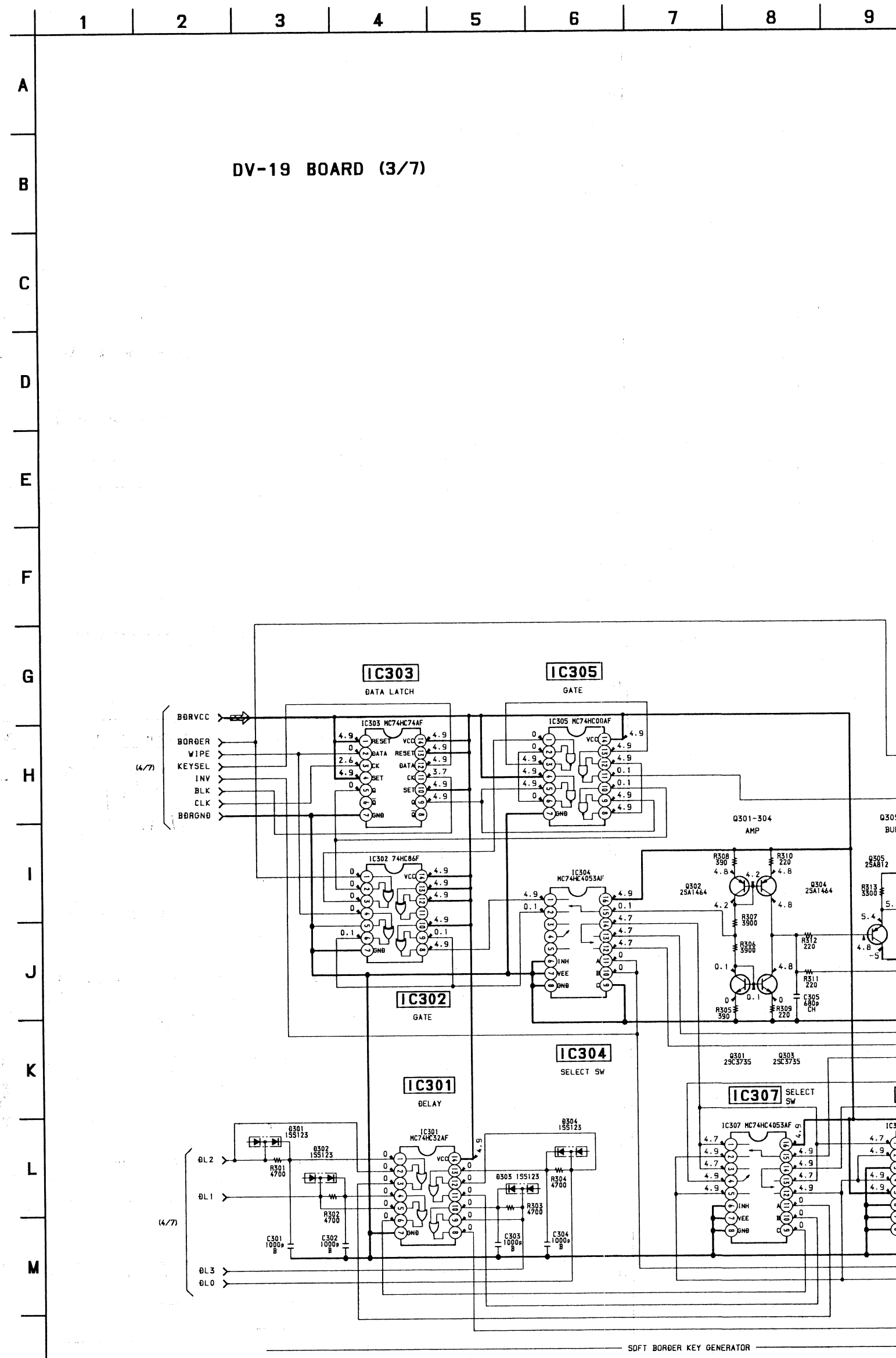
• **SIGNAL PATH (ANALOG)**

VIDEO SIGNAL			AUDIO SIGNAL
CHROMA	Y	Y/CHROMA	
⇨	⇨	⇨	

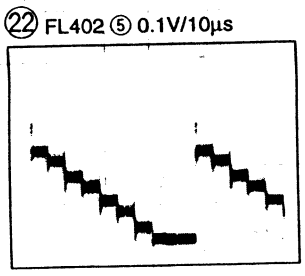
DV-19 (3/7) (VIDEO (3/7)) SCHEMATIC DIAGRAM

• See page 4-82 for PRINTED WIRING BOARD

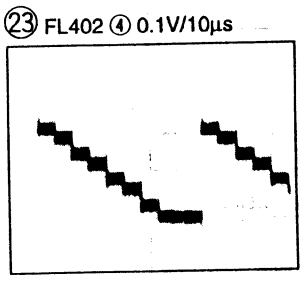
– Ref No. DV-19 BOARD : 7,000 Seriese –



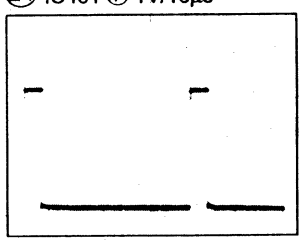
㉒ FL402 ⑤ 0.1V/10µs



㉓ FL402 ④ 0.1V/10µs

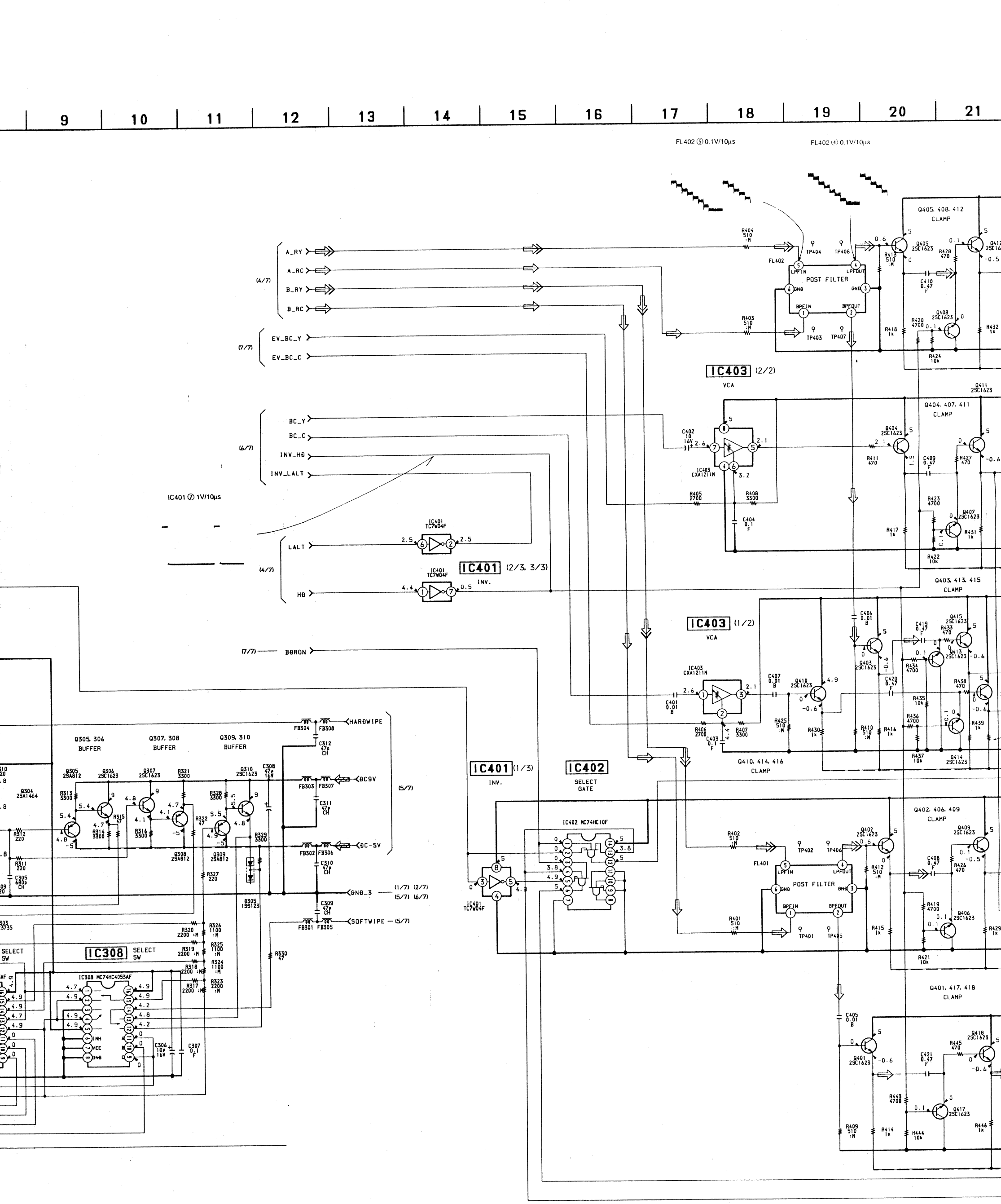


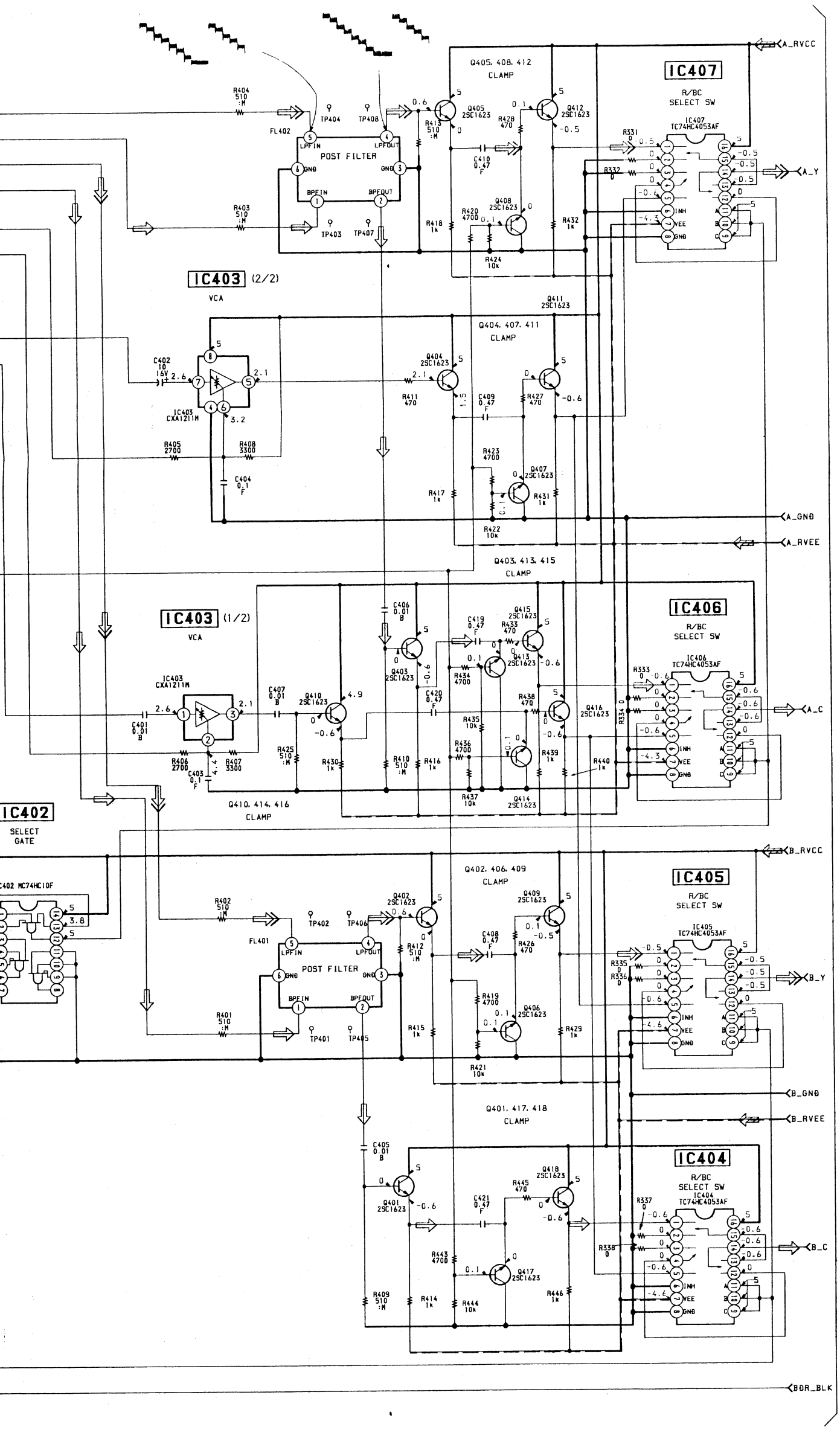
㉔ IC401 ⑦ 1V/10µs



• **SIGNAL PATH (ANALOG)**

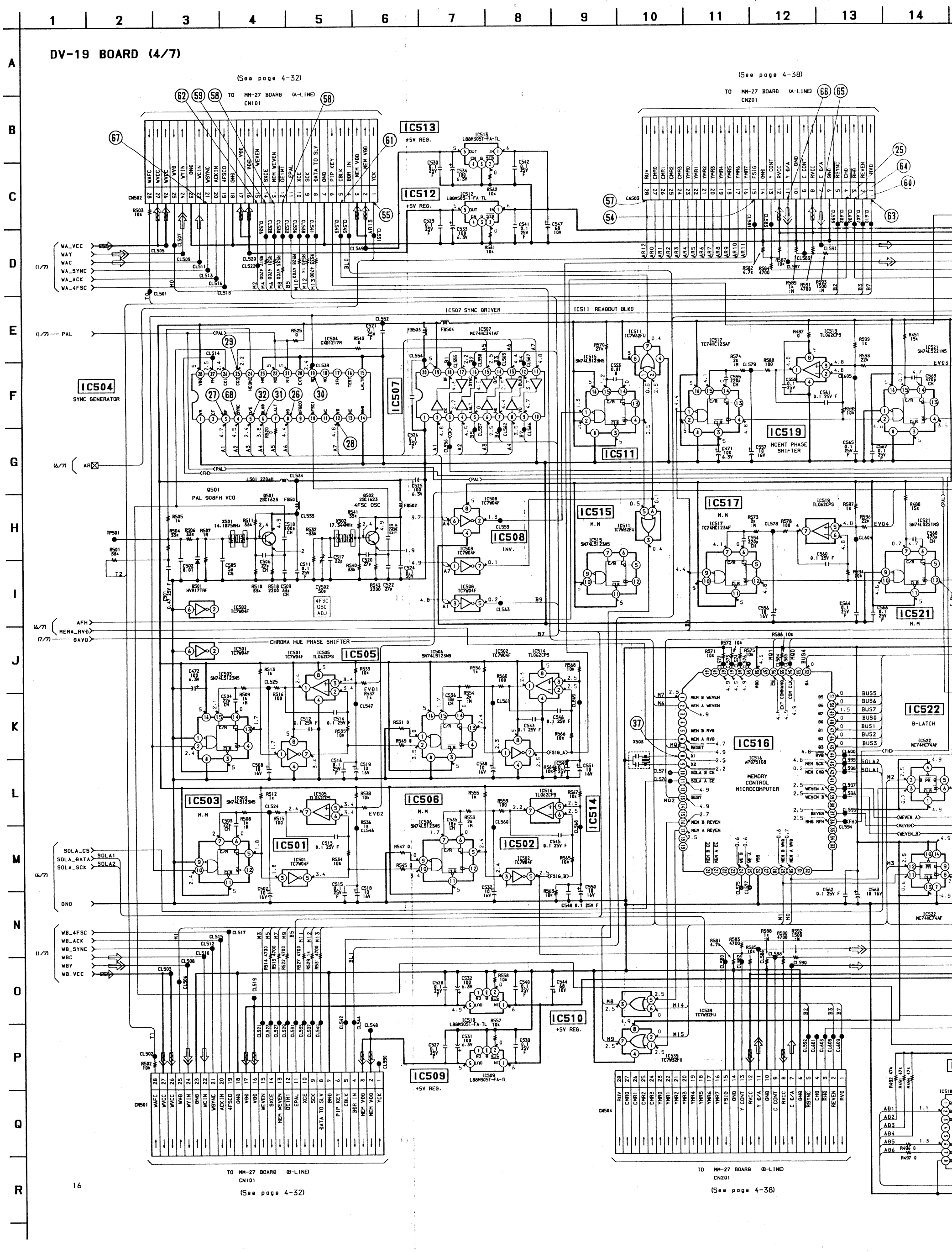
VIDEO SIGNAL			AUDIO SIGNAL
CHROMA	Y	Y/CHROMA	
⇨	⇨		


FL402 ⑤ 0.1V/10µs
FL402 ④ 0.1V/10µs
IC401 ⑦ 1V/10µs
A_RY
A_RC
B_RY
B_RC
(4/7)
EV_BC_Y
EV_BC_C
(7/7)
BC_Y
BC_C
INV_HØ
INV_LALT
(6/7)
LALT
HØ
(4/7)
IC401 (2/3, 3/3)
INV.
IC401 TC7W04F
BØRON
(7/7)
IC403 (2/2)
VCA
IC403 CXA1211M
IC401 (1/3)
INV.
IC402
SELECT GATE
IC402 MC74HC10F
IC401 TC7W04F
IC308
SELECT SW
IC308 MC74HC4053AF
INH
VEE
GNØ
FL402
FL401
LPFIN
LPFOUT
GNØ
BPFIN
BPFOUT
POST FILTER
TP404
TP408
TP403
TP407
TP402
TP406
TP401
TP405
Q405. 408. 412
CLAMP
Q404. 407. 411
CLAMP
Q403. 413. 415
CLAMP
Q410. 414. 416
CLAMP
Q402. 406. 409
CLAMP
Q401. 417. 418
CLAMP
Q305. 306
BUFFER
Q307. 308
BUFFER
Q309. 310
BUFFER
HARØWIPE
ØC9V
ØC-5V
GNØ_3
SOFTWIPE
(5/7)
(1/7) (2/7)
(5/7) (6/7)


FL402 ⑤ 0.1V/10μs
FL402 ④ 0.1V/10μs
IC403 (2/2)
VCA
IC403 (1/2)
VCA
IC402
SELECT GATE
IC407
R/BC SELECT SW
IC406
R/BC SELECT SW
IC405
R/BC SELECT SW
IC404
R/BC SELECT SW
Q405. 408. 412 CLAMP
Q404. 407. 411 CLAMP
Q403. 413. 415 CLAMP
Q410. 414. 416 CLAMP
Q402. 406. 409 CLAMP
Q401. 417. 418 CLAMP
POST FILTER
FL402
FL401
TP404
TP408
TP403
TP407
TP402
TP406
TP401
TP405
A_RVCC
A_Y
A_GND
A_RVEE
A_C
B_RVCC
B_Y
B_GND
B_RVEE
B_C
BOR_BLK
(5/7)

DV-19 (4/7) (VIDEO (4/7)) SCHEMATIC DIAGRAM • See page 4-82 for PRINTED WIRING BOARD

– Ref No. DV-19 BOARD : 7,000 Seriese –



VIDEO (4/7)

14 15 16 17 18 19 20 21 22 23 24 25 26

A B C D E F G H I J K L M N O P Q R

SHIFT COUNTER

IC540 IC541 IC542 IC543 INV.

IC540 MC74HC175F

IC541 TC7W74F

IC542 MC74HC4024F

IC543 TC7S00F

R576 0

B1 B6

FB548

<CK>

SC2 (6/7)

L504 16n 82nH CH C469 C467 0.01 B R481 1k R482 470 C470 0.01 B L503 18nH C468 82p CH

BL0 BL1

T0 T1 T2 T3

AØ_A_AFC AØ_B_AFC AØ_PLL1 AØ_PLL2 BLA BLB (7/7)

FB536 FB537 C466 47p CH PIPAKEY

FB514 FB532 C458 47p CH A_RVCC (5/7)

FB513 FB531 C457 47p CH A_RC (3/7)

EV_A_RC (7/7)

FB512 FB530 C456 47p CH A_RY (3/7)

EV_A_RY

EVØ1 EV_A_HUE

EVØ2 EV_B_HUE

EVØ3 EV_A_HCENT

EVØ4 EV_B_HCENT (7/7)

FB511 FB529 C455 220p CH SCO

FB510 FB528 C454 220p CH SC1 (2/7)X(5/7)

ØC6V2 (5/7)

FL501

VØMC (7/7)

VØMM (6/7)

BUS0 BUS1 BUS2 BUS3 BUS4 BUS5 BUS6 BUS7 (7/7)

INV BØRVCC BØRDER WIPE BLK KEYSEL CLK BØRGNØ (3/7)

BL0 BL1 BL2 BL3 (3/7)

MQ0 MEM_SCK MQ1 MEM_CS MQ2 MEM_BUSY MQ3 CO_RESET MQ4 WIP_SCK MQ5 WIP_CS (7/7)

MASTERCLK EV_B_RY (7/7)

B_RY (3/7)

EV_B_RC (7/7)

B_RC (3/7)

B_RVCC (5/7)

HØ (3/7)X(5/7)

CP (5/7)X(6/7)

BLKG (5/7)

BF (5/7)X(6/7)

SYNC (5/7)

LALT (3/7)

REVEN (7/7)

AØ_BLK AØ_SYNC AØ_BF AØ_CP (2/7)

M4 MA_SXCE M5 MB_SXCE M10 MA CS M11 MB CS M12 VIDEO CLK M13 VIDEO DATA M14 AREVEN CONT M15 BREVEN CONT (7/7)X(1/7)X(7/7)

0/90 DEG SUBCARRIER PLL

IC524 PHASE COMP. CXA3065A

IC530 AMP TC7WU04F

IC532 MC74HC74AF

IC533 TC74HC86AF GATE

IC535 +5V REG. L88MS05T-FA-TL

IC521 SN74LS221NS M.M

IC522 MC74HC74AF Ø-LATCH

IC529 WIPE GEOMETRY PROCESSOR

IC531 MSM72H017FS WIPE PATTERN GENERATOR

SIELØ CASE LNBØØ1 LNBØØ2 LNBØØ3 LNBØØ4 LNBØØ5 LNBØØ6

IC525 KEY START SELECT MC74HC00AF

IC527 TC7W08F GATE

IC526 TC7WU04F MAIN&WIPE MICOM CLOCK GEN

IC520 ADVANCE SYNC GENERATOR

IC536 MC74HC74AF

IC537 TC7W00F

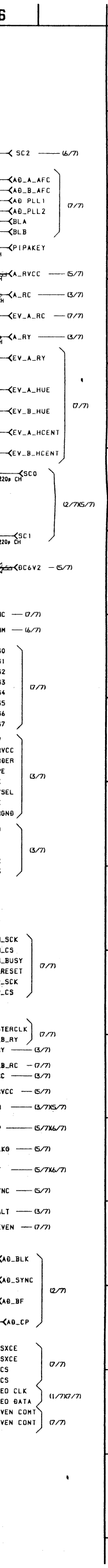
IC523 CXB1217M20 SYNC GENERATOR

IC528 L88MS05T-FA-TL +5V REG.

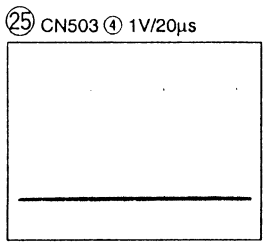
IC534 TC7S04F INV.

IC518 SN74HC4040ANS

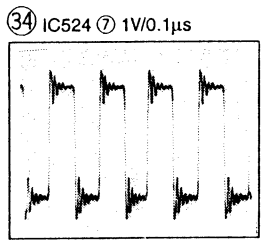
IC520 TC74HC133AF



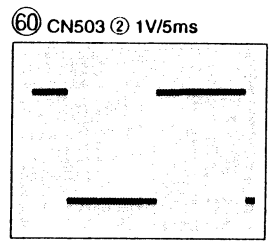
25 CN503 ④ 1V/20µs



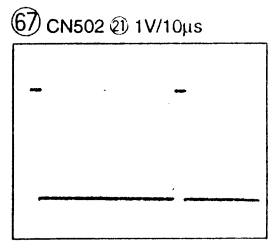
34 IC524 ⑦ 1V/0.1µs



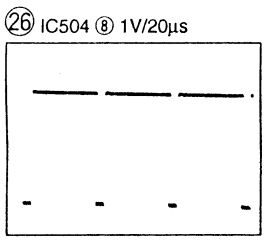
60 CN503 ② 1V/5ms



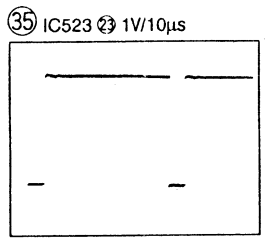
67 CN502 ㉑ 1V/10µs



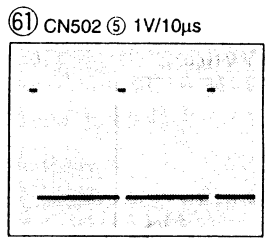
26 IC504 ⑧ 1V/20µs



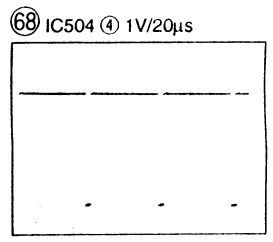
35 IC523 ㉓ 1V/10µs



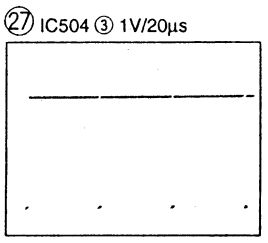
61 CN502 ⑤ 1V/10µs



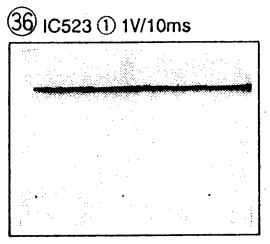
68 IC504 ④ 1V/20µs



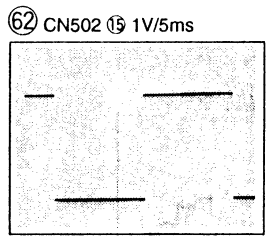
27 IC504 ③ 1V/20µs



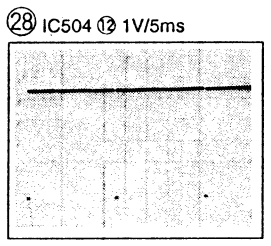
36 IC523 ① 1V/10ms



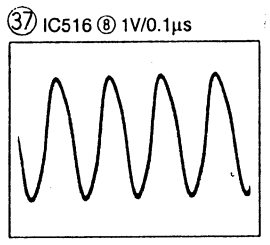
62 CN502 ⑮ 1V/5ms



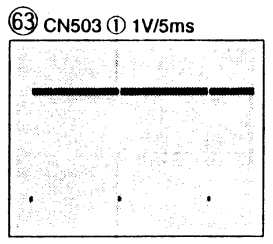
28 IC504 ⑫ 1V/5ms



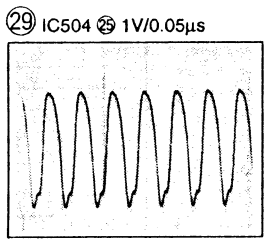
37 IC516 ⑧ 1V/0.1µs



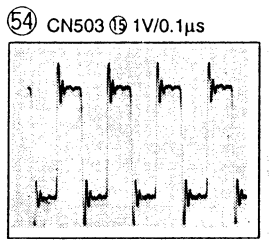
63 CN503 ① 1V/5ms



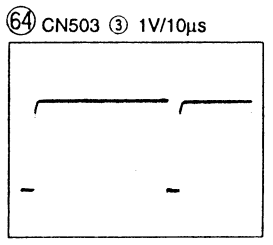
29 IC504 ㉕ 1V/0.05µs



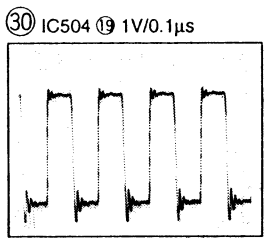
54 CN503 ⑮ 1V/0.1µs



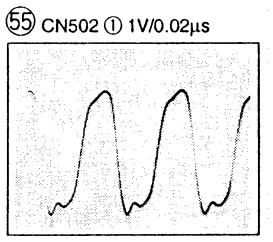
64 CN503 ③ 1V/10µs



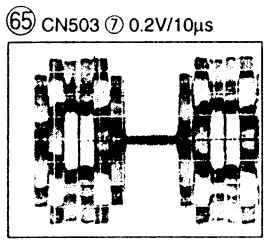
30 IC504 ⑲ 1V/0.1µs



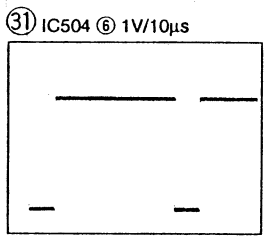
55 CN502 ① 1V/0.02µs



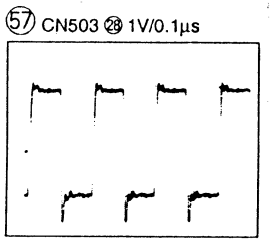
65 CN503 ⑦ 0.2V/10µs



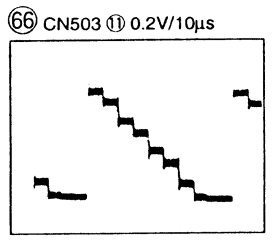
31 IC504 ⑥ 1V/10µs



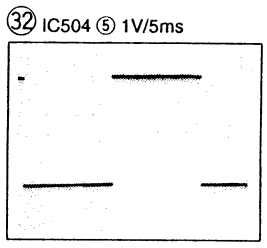
57 CN503 ㉘ 1V/0.1µs



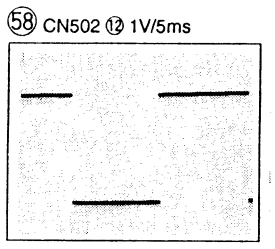
66 CN503 ⑪ 0.2V/10µs



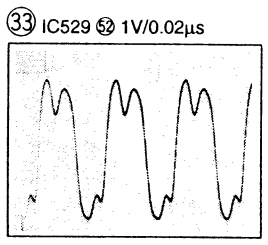
32 IC504 ⑤ 1V/5ms



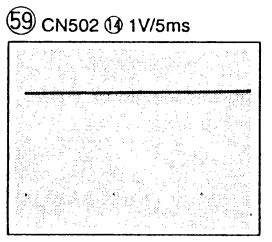
58 CN502 ⑫ 1V/5ms



33 IC529 ㉜ 1V/0.02µs



59 CN502 ⑭ 1V/5ms

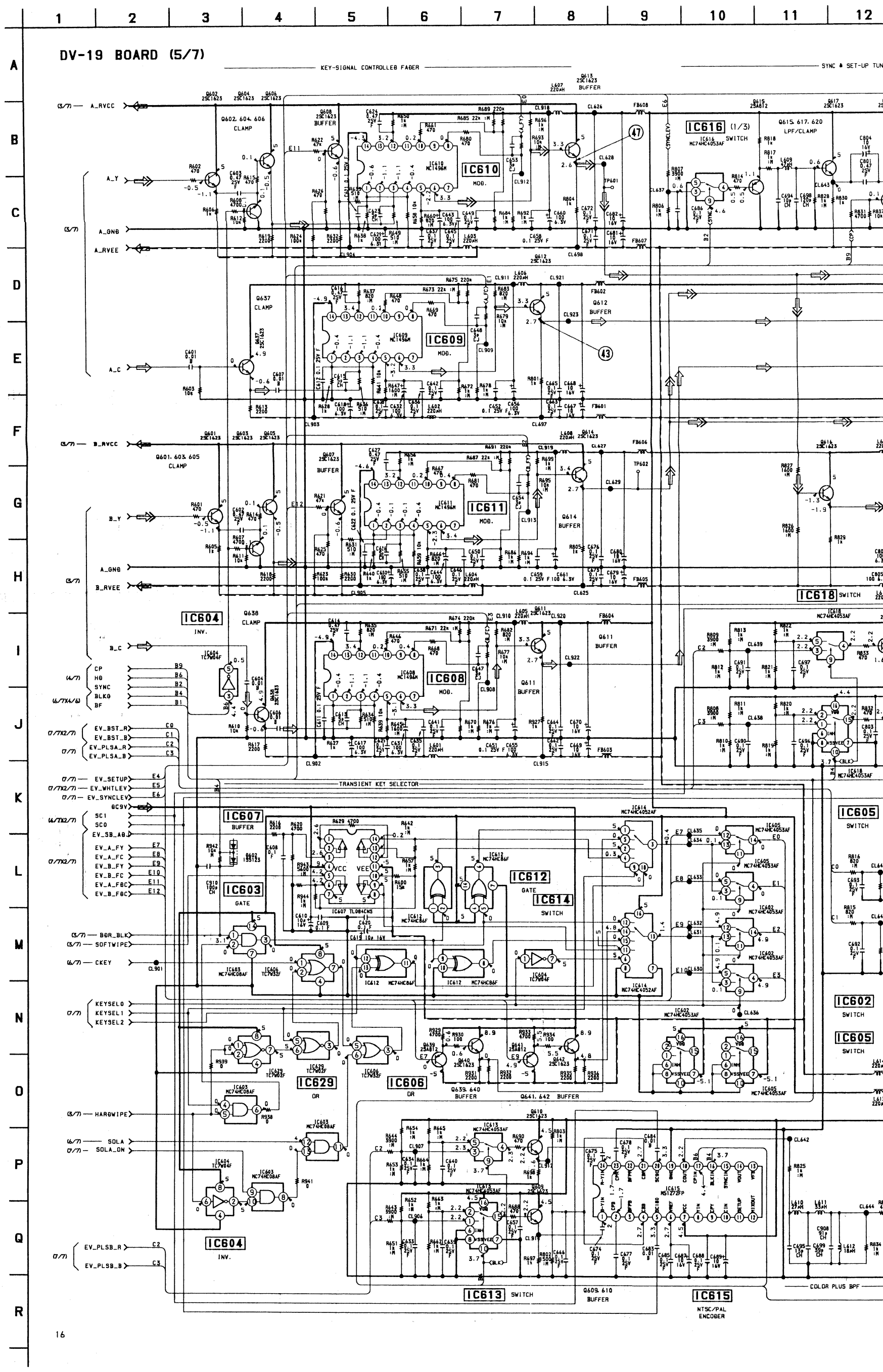


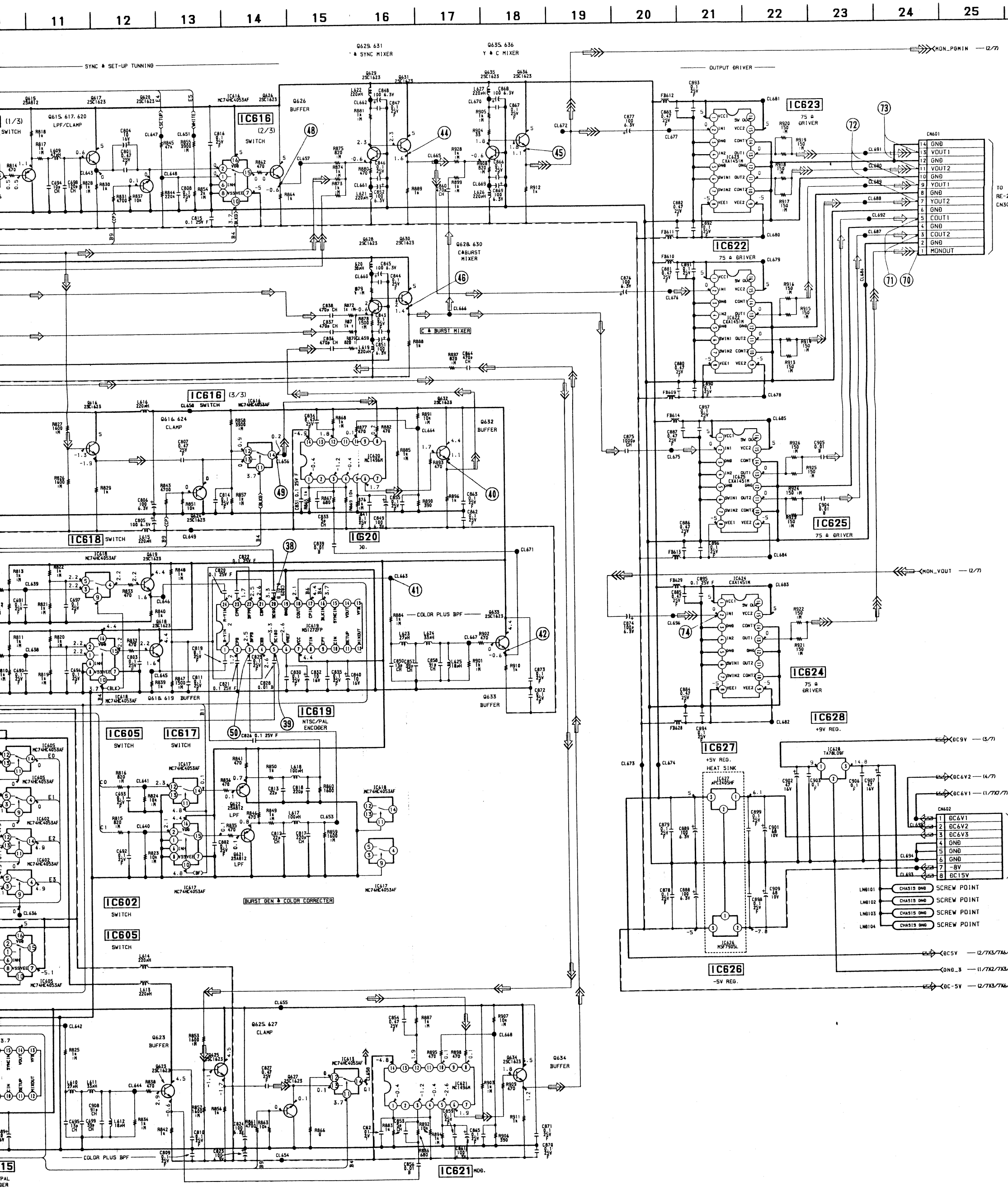
• **SIGNAL PATH (ANALOG)**

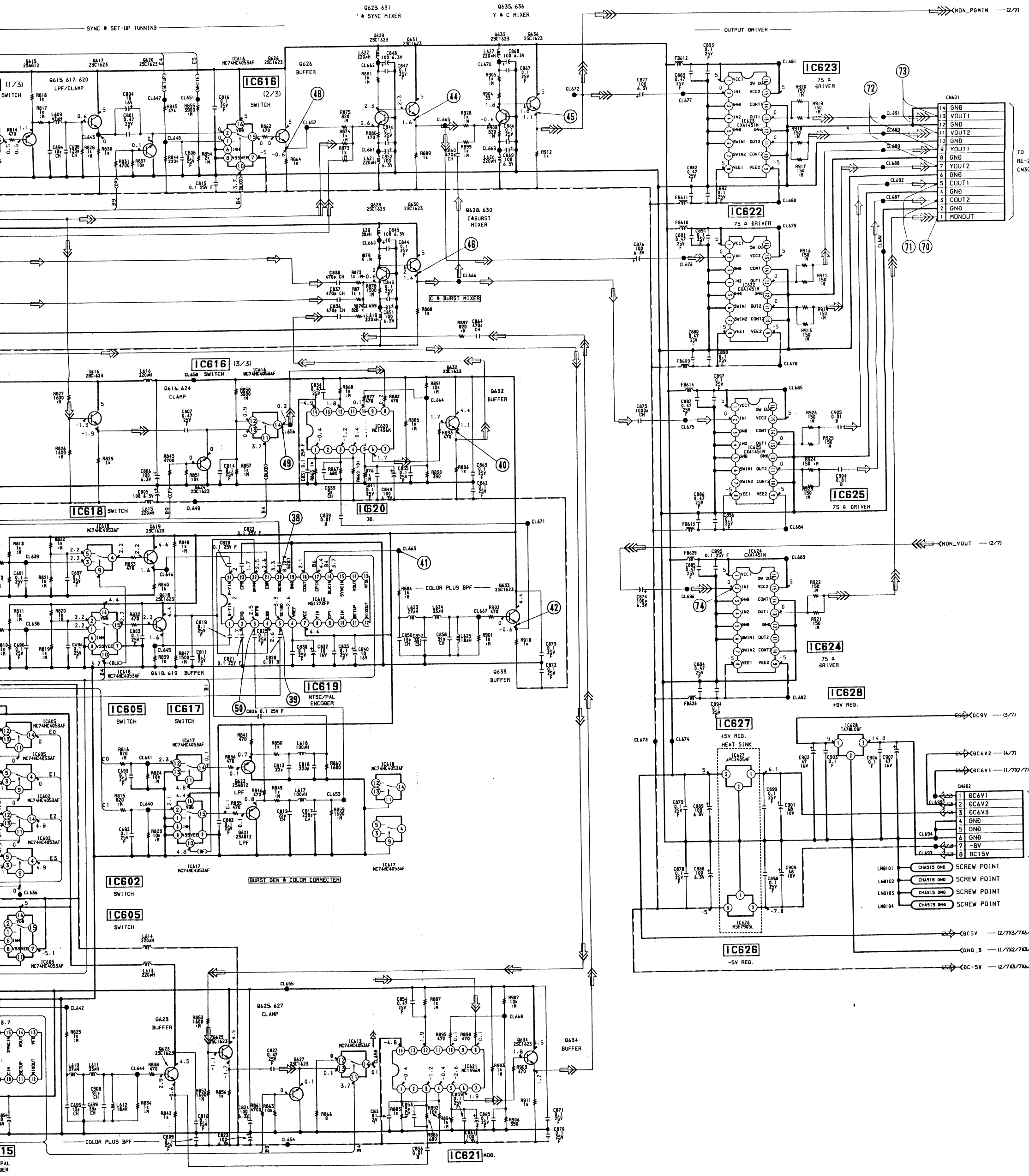
VIDEO SIGNAL			AUDIO SIGNAL
CHROMA	Y	Y/CHROMA	
⇨	⇨		

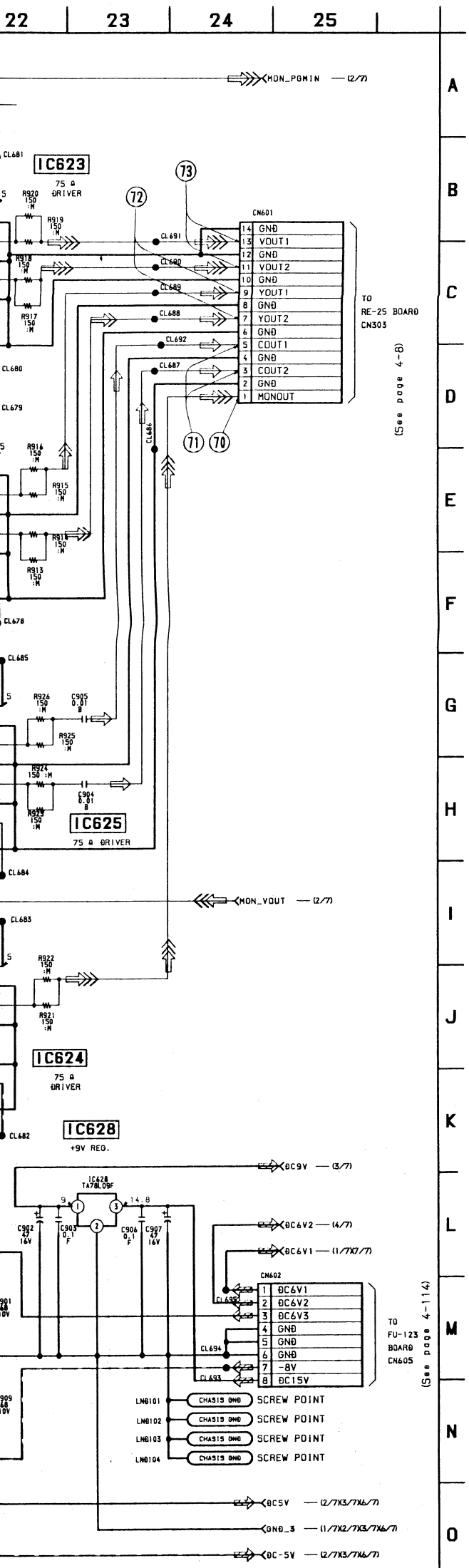
DV-19 (5/7) (VIDEO (5/7)) SCHEMATIC DIAGRAM • See page 4-82 for PRINTED WIRING BOARD

– Ref No. DV-19 BOARD : 7,000 Seriese –

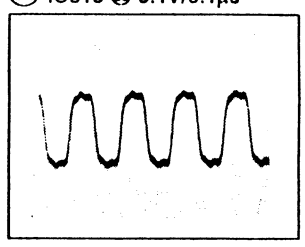



11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
SYNC & SET-UP TUNNING
Q629, 631 Y & SYNC MIXER
Q635, 636 Y & C MIXER
OUTPUT DRIVER
MON_PGMIN (2/7)
IC616 (1/3) SWITCH
LPF/CLAMP
IC616 (2/3) SWITCH
Q626 BUFFER
Q628, 630 C&BURST MIXER
C & BURST MIXER
IC616 (3/3) SWITCH
Q616, 624 CLAMP
IC620 MC1496M
Q632 BUFFER
IC618 SWITCH
IC619 NTSC/PAL ENCODER
Q618, 619 BUFFER
Q633 BUFFER
IC623 75Ω DRIVER
IC622 75Ω DRIVER
IC624 75Ω DRIVER
IC625 75Ω DRIVER
IC628 +9V REG.
IC627 +5V REG.
IC626 -5V REG.
CN601
GND
VOUT1
VOUT2
VOUT3
COUT1
COUT2
MONOUT
TO RE-2 CN30
CN602
BC6V1
BC6V2
BC6V3
GND
-8V
BC15V
SCREW POINT
CHASIS GND
MON_VOUT (2/7)
BC9V (3/7)
BC6V2 (4/7)
BC6V1 (1/7)(7/7)
BC5V (2/7X3/7X6)
GND_3 (1/7X2/7X3)
BC-5V (2/7X3/7X6)
BURST GEN & COLOR CORRECTER
COLOR PLUS BPF
IC621 MOD.
IC602 SWITCH
IC605 SWITCH
IC617 SWITCH

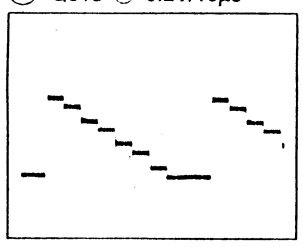

SYNC & SET-UP TUNNING
Q629, 631 Y & SYNC MIXER
Q635, 636 Y & C MIXER
OUTPUT DRIVER
MON_PGMIN (2/7)
IC616 (2/3) SWITCH
Q626 BUFFER
IC623 75Ω DRIVER
IC622 75Ω DRIVER
IC625 75Ω DRIVER
IC624 75Ω DRIVER
IC628 +9V REG.
IC627 +5V REG.
IC626 -5V REG.
CN601
1 MONOUT
2 GND
3 COUT2
4 GND
5 COUT1
6 GND
7 VOUT2
8 GND
9 YOUT1
10 GND
11 VOUT2
12 GND
13 VOUT1
14 GND
TO RE-2 CN30
IC616 (3/3) SWITCH
Q616, 624 CLAMP
Q632 BUFFER
IC620 MC1496M
IC618 SWITCH
IC619 NTSC/PAL ENCODER
Q628, 630 C&BURST MIXER
C & BURST MIXER
IC605 SWITCH
IC617 SWITCH
IC602 SWITCH
BURST GEN & COLOR CORRECTER
Q618, 619 BUFFER
Q633 BUFFER
COLOR PLUS BPF
Q625, 627 CLAMP
Q623 BUFFER
Q634 BUFFER
IC621 MOD.
MON_VOUT (2/7)
CN602
1 DC6V1
2 DC6V2
3 DC6V3
4 GND
5 GND
6 GND
7 -8V
8 DC15V
DC9V (3/7)
DC6V2 (4/7)
DC6V1 (1/7)(3/7)
DC5V (2/7)(3/7)(6/7)
GND_3 (1/7)(2/7)(3/7)
DC-5V (2/7)(3/7)(6/7)
CHASIS GND SCREW POINT
CHASIS GND SCREW POINT
CHASIS GND SCREW POINT
CHASIS GND SCREW POINT



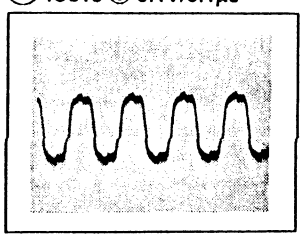
38 IC619 ⑳ 0.1V/0.1µs



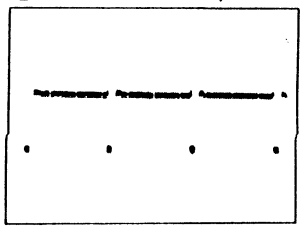
47 Q613 Ⓔ 0.2V/10µs



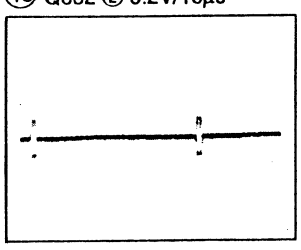
39 IC619 ⑤ 0.1V/0.1µs



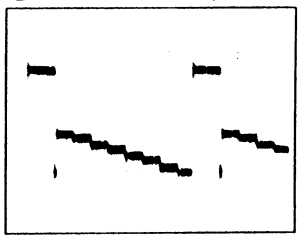
48 Q626 Ⓔ 0.1V/20µs



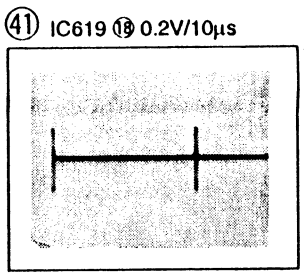
40 Q632 Ⓔ 0.2V/10µs



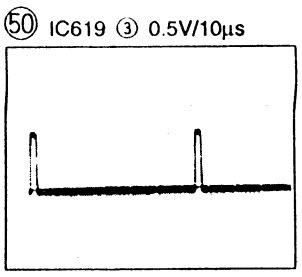
49 IC616 ⑭ 0.2V/10µs



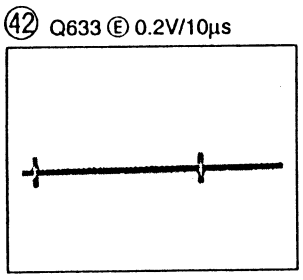
41 IC619 ⑱ 0.2V/10µs



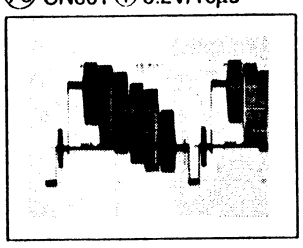
50 IC619 ③ 0.5V/10µs



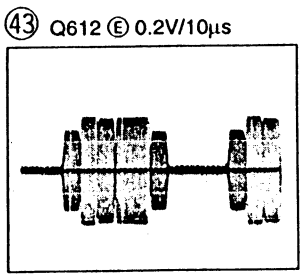
42 Q633 Ⓔ 0.2V/10µs



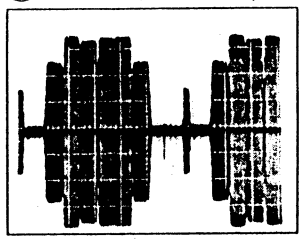
70 CN601 ① 0.2V/10µs



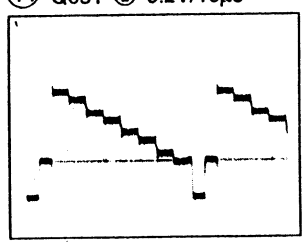
43 Q612 Ⓔ 0.2V/10µs



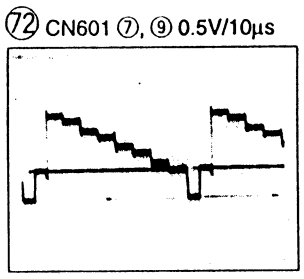
71 CN601 ③, ⑤ 0.2V/10µs



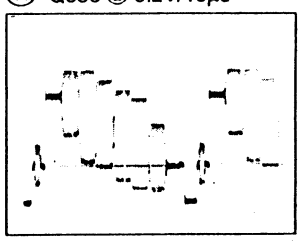
44 Q631 Ⓔ 0.2V/10µs



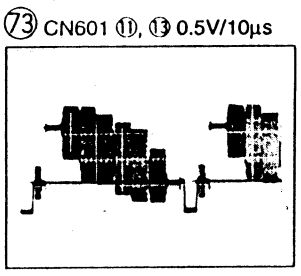
72 CN601 ⑦, ⑨ 0.5V/10µs



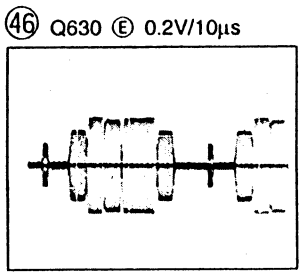
45 Q636 Ⓔ 0.2V/10µs



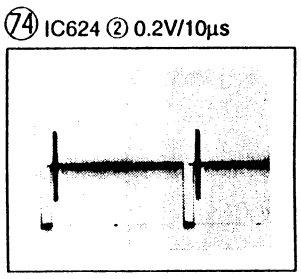
73 CN601 ⑪, ⑬ 0.5V/10µs



46 Q630 Ⓔ 0.2V/10µs



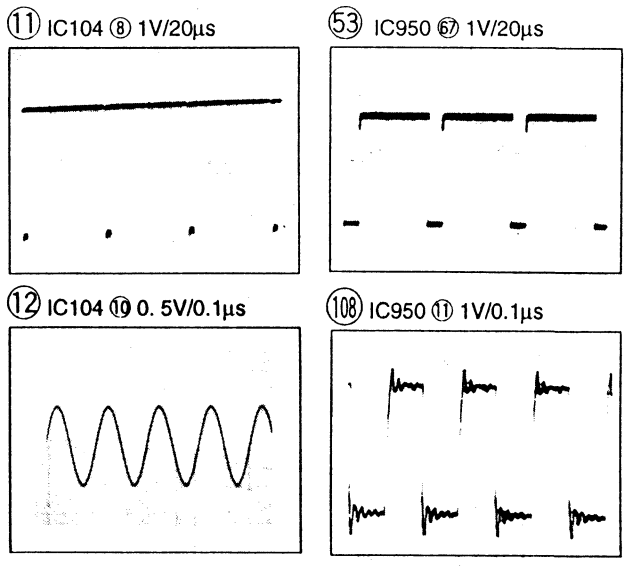
74 IC624 ② 0.2V/10µs



• **SIGNAL PATH (ANALOG)**

VIDEO SIGNAL			AUDIO SIGNAL
CHROMA	Y	Y/CHROMA	
⇨	⇨	⇨	

VIDEO (5/7)



DV-19 (6/7) (VIDEO (6/7)) SCHEMATIC DIAGRAM • See page 4-82 for PRINTED WIRING BOARD

– Ref No. DV-19 BOARD : 7,000 Seriese –

DV-19 BOARD (6/7)

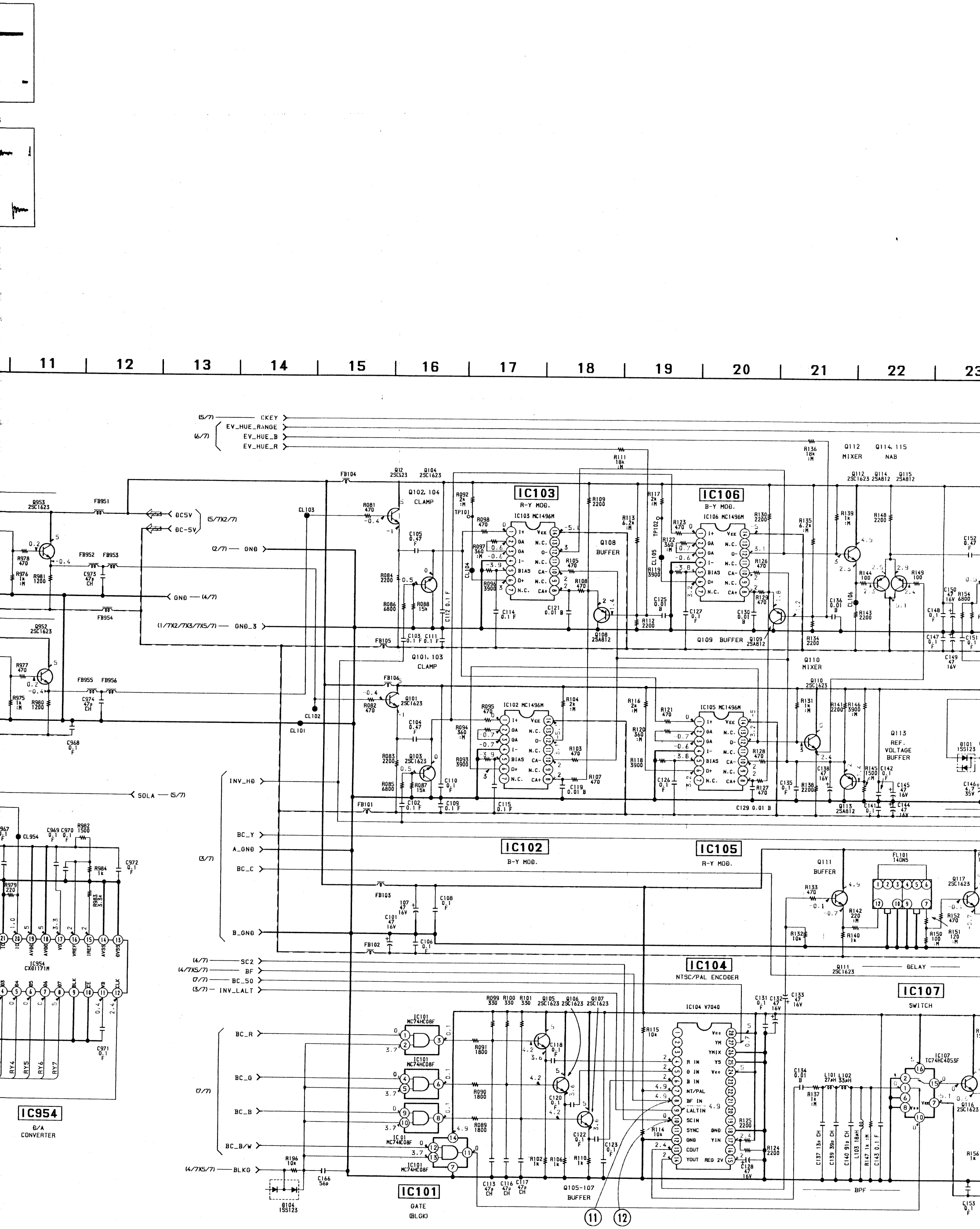
IC951 M.M

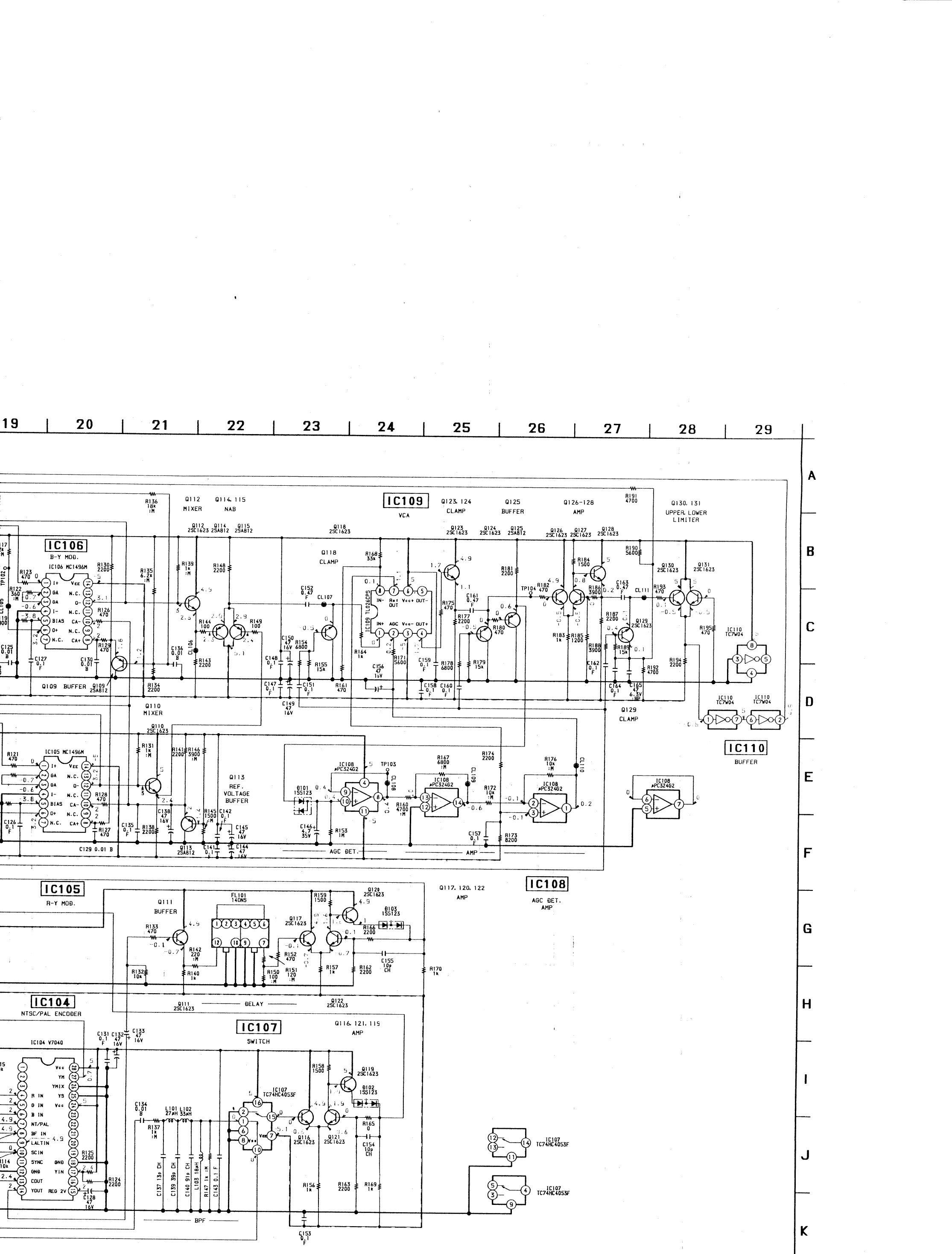
IC955 ANΘ

IC950 MB620461 LUMI KEY/ CHROMA KEY

IC952 CX01171M Θ/A CONVERTER

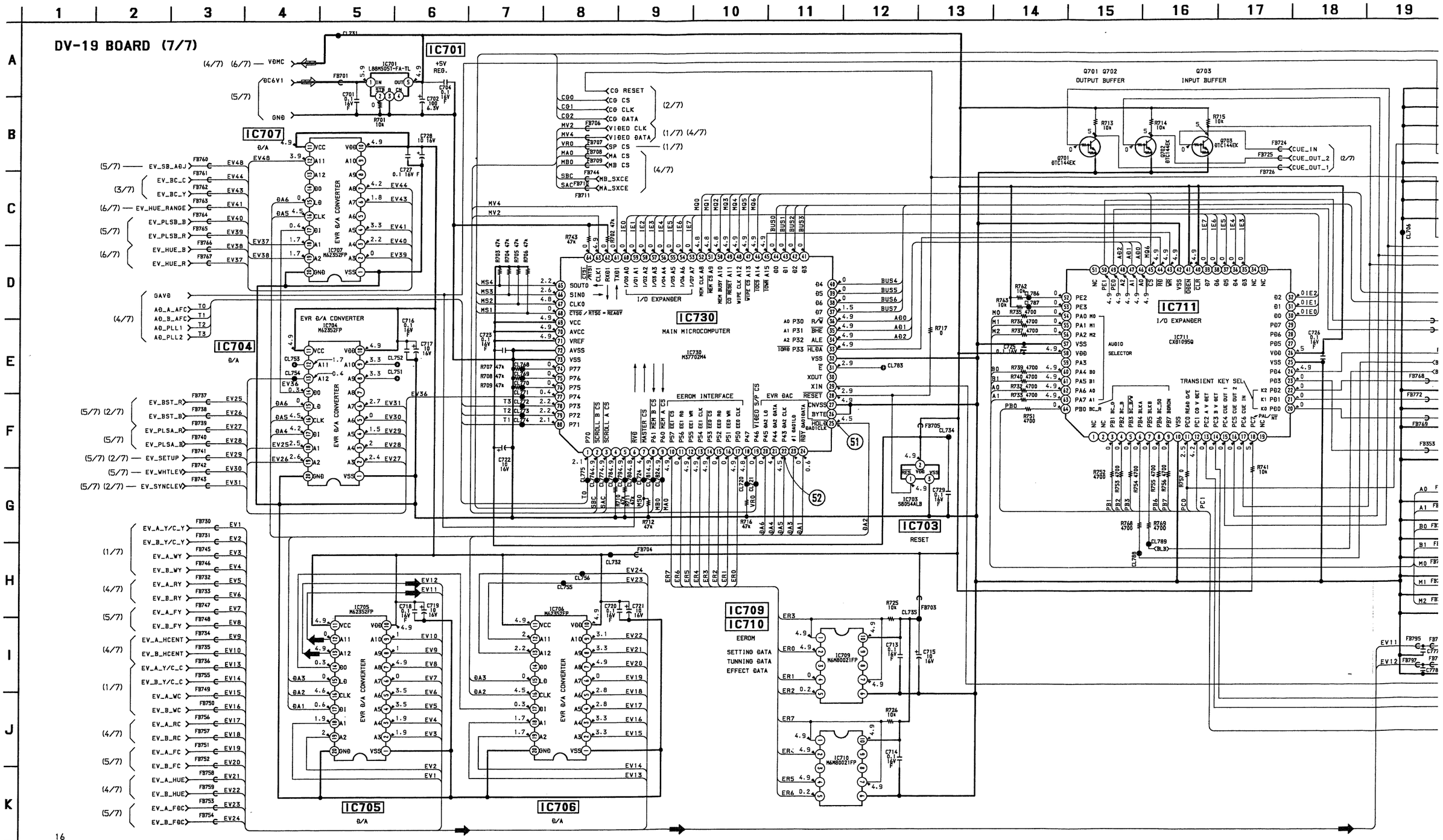
IC954 CX01171M Θ/A CONVERTER


11 12 13 14 15 16 17 18 19 20 21 22 23
(5/7) CKEY
EV_HUE_RANGE
(6/7) EV_HUE_B
EV_HUE_R
IC103
R-Y MOD.
IC103 MC1496M
IC106
B-Y MOD.
IC106 MC1496M
Q108 BUFFER
Q109 BUFFER
Q112 MIXER
Q114, 115 NAB
Q110 MIXER
Q113 REF. VOLTAGE BUFFER
Q102, 104 CLAMP
Q101, 103 CLAMP
IC102 MC1496M
IC105 MC1496M
(5/7X2/7) ĐC5V
ĐC-5V
(2/7) GNĐ
GNĐ — (4/7)
(1/7X2/7X3/7X5/7) — GNĐ_3
SOLA — (5/7)
INV_HĐ
BC_Y
A_GNĐ
(3/7)
BC_C
B_GNĐ
(4/7) SC2
(4/7X5/7) BF
(7/7) BC_50
(3/7) INV_LALT
BC_R
BC_G
(7/7)
BC_B
BC_B/W
(4/7X5/7) BLKG
IC954
CXĐ1171M
Đ/A CONVERTER
IC102
B-Y MOĐ.
IC105
R-Y MOĐ.
IC104
NTSC/PAL ENCOĐER
IC101
GATE (BLGK)
IC107
SWITCH
Q111 BUFFER
Q111 ĐELAY
IC104 V7040
IC107 TC74HC4053F
Q105-107 BUFFER
BPF
FL101 140NS


IC106
B-Y MOD.
IC106 MC1496M
IC109
VCA
IC110
BUFFER
IC105
R-Y MOD.
IC104
NTSC/PAL ENCODER
IC107
SWITCH
IC108
AGC DET. AMP
Q112 MIXER
Q114, 115 NAB
Q118 CLAMP
Q123, 124 CLAMP
Q125 BUFFER
Q126-128 AMP
Q130, 131 UPPER, LOWER LIMITER
Q109 BUFFER
Q110 MIXER
Q129 CLAMP
Q113 REF. VOLTAGE BUFFER
Q111 BUFFER
Q117, 120, 122 AMP
Q116, 121, 119 AMP
AGC DET.
AMP
DELAY
BPF
IC104 V7040
IC105 MC1496M
IC108 μPC324G2
IC109 TL026CPS
IC110 TC7W04
IC107 TC74HC4053F

DV-19 (7/7) (VIDEO (7/7)) SCHEMATIC DIAGRAM • See page 4-82 for PRINTED WIRING BOARD

– Ref No. DV-19 BOARD : 7,000 Seriese –



• SIGNAL PATH (ANALOG)

VIDEO SIGNAL			AUDIO SIGNAL
CHROMA	Y	Y/CHROMA	
			➡

8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23

A B C D E F G H I J K

CG RESET
CG CS
CG CLK
CG DATA
VIDEO CLK
VIDEO DATA
SP CS
MA CS
MB CS
MB_SXCE
MA_SXCE
(2/7)
(1/7) (4/7)
(1/7)
(4/7)

IC730
MAIN MICROCOMPUTER
I/O EXPANDER
EEROM INTERFACE
EVR DAC

IC711
I/O EXPANDER
AUDIO SELECTOR
TRANSIENT KEY SEL

IC703
RESET

IC709
IC710
EEROM
SETTING DATA
TUNNING DATA
EFFECT DATA

Q701 Q702 OUTPUT BUFFER
Q703 INPUT BUFFER

CUE_IN
CUE_OUT_2
CUE_OUT_1
(2/7)

CN701 21P

21	READY	
20	GND	
19	CG DATA	
18	GND	
17	CG CS	
16	GND	
15	CG SCK	
14	R E/O	
13	RV0	
12	GND	
11	DATA FROM MASTER	
10	GND	
9	DATA TO MASTER	
8	GND	
7	SCK	
6	GND	
5	MASTER CS	
4	RESET	
3	CUE OUT 1	
2	CUE OUT 2	
1	CUE IN	

TO CP-64 BOARD CN500
(See page 4-18)

BREVEN CONT
AREVEN CONT
(4/7)

MOUT_SEL (2/7)
BLA
BLB
(4/7)

KEYSEL2
KEYSEL1
KEYSEL0
(5/7)

SOLA_ON

MEM_SCK
MEM_CS
MEM_BUSY
CO_RESET
WIP_SCK
WIP_CS
(4/7)

BUS0 BUS1 BUS2 BUS3 BUS4 BUS5 BUS6 BUS7
(4/7)

CN702

10	AU SEL A0	
9	AU SEL A1	
8	AU SEL B0	
7	AU SEL B1	
6	M-OUT SEL 0	
5	M-OUT SEL 1	
4	M-OUT SEL 2	
3	GND	
2	EV AUDIO A	
1	EV AUDIO B	

TO AM-32 BOARD CN003
(See page 4-71)

MASTERCLK (4/7)
BVOUT
AVOUT
(1/7)

BC_R
BC_G
BC_B
BC_B/W
BC_SO
(6/7)
BORON (3/7)
REVEN (4/7)
V_DET (2/7)

51 IC730 ㉕ 1V/2ms

52 IC730 ㉒ 1V/2ms

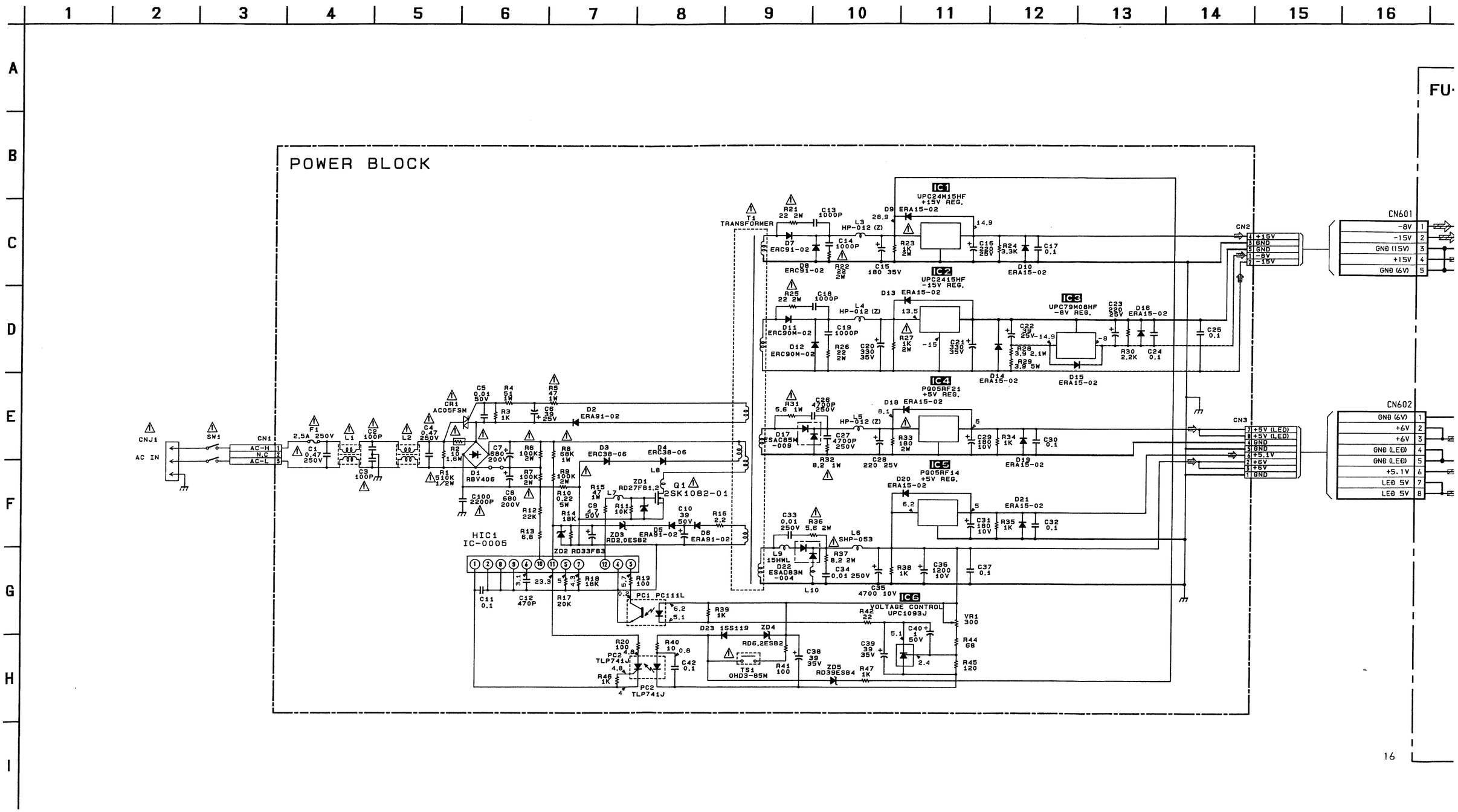
69 CN701 ⑮ 1V/5ms

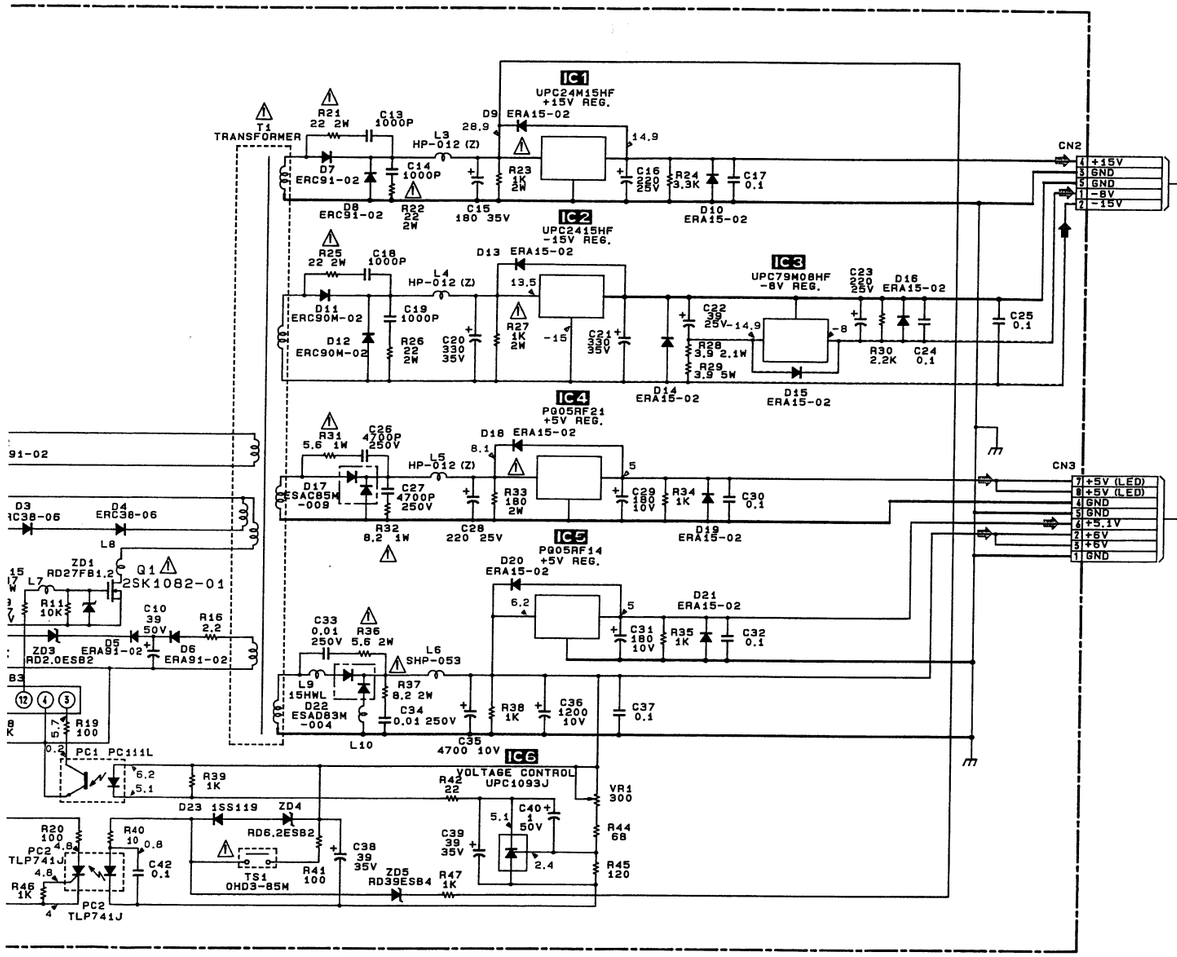
VIDEO (7/7)

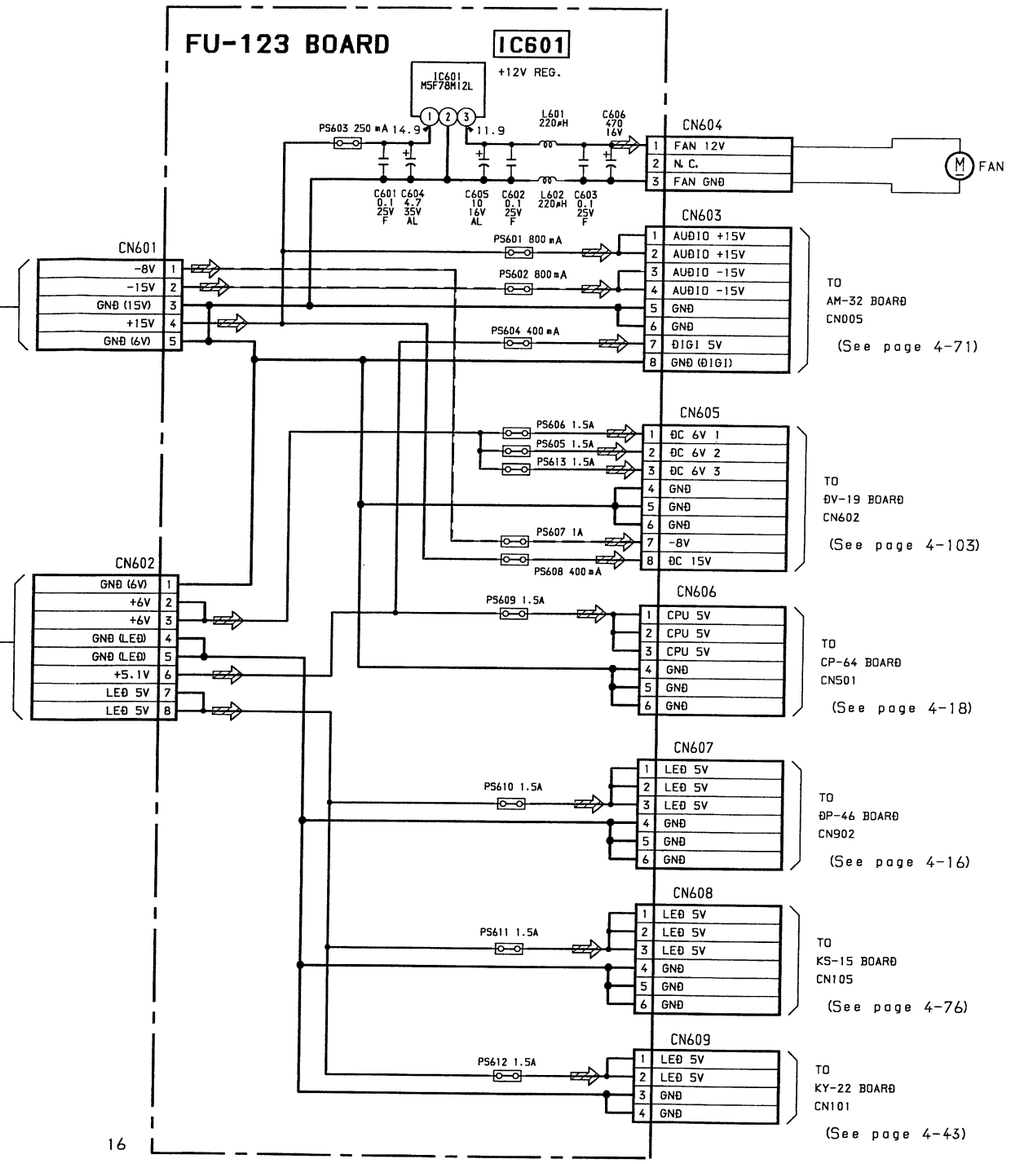
FXE-100P

FU-123 (FUSE) /POWER BLOCK SCHEMATIC DIAGRAM

– Ref No. FU-123 BOARD : 3,000 Seriese –





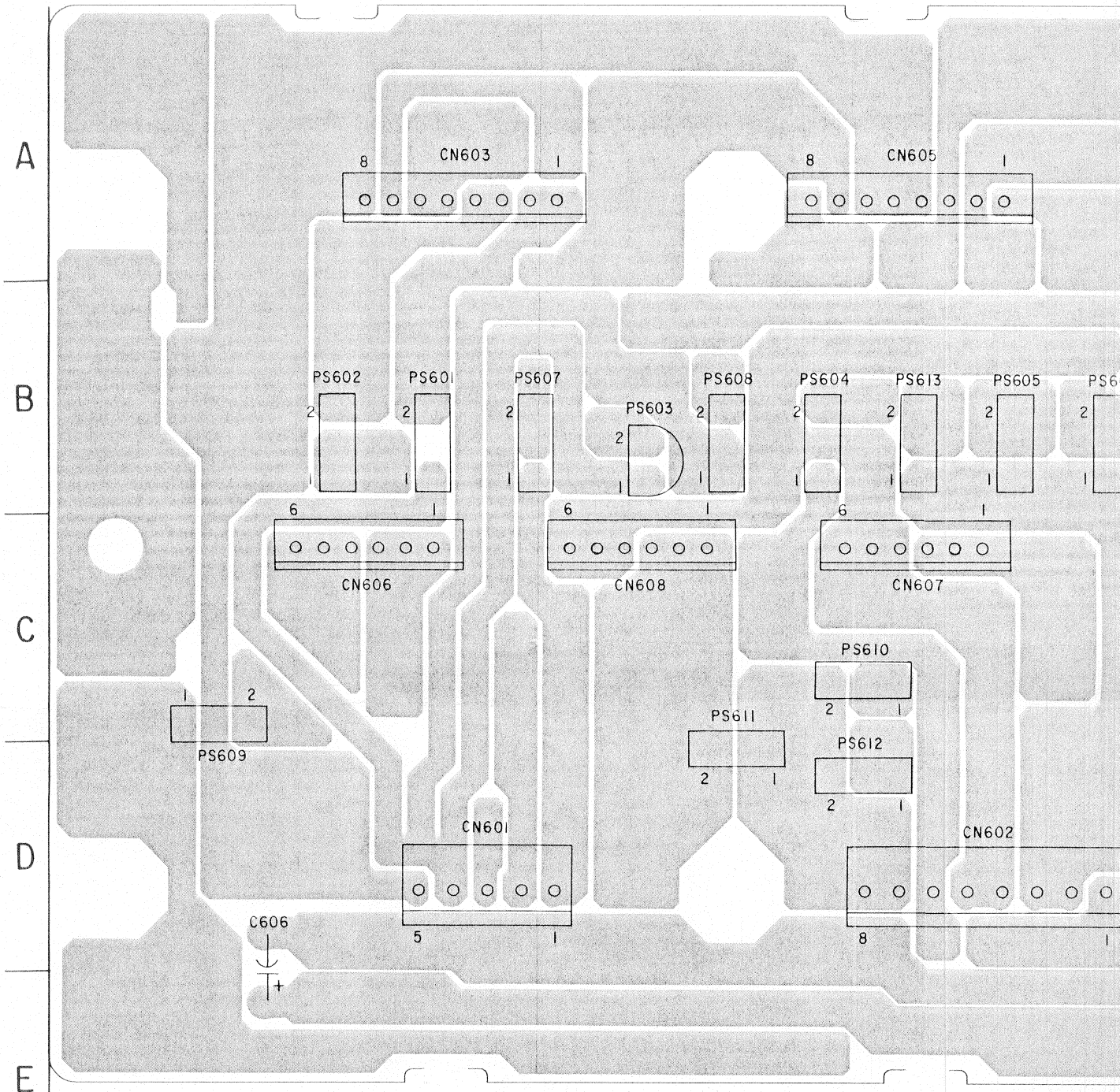


Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

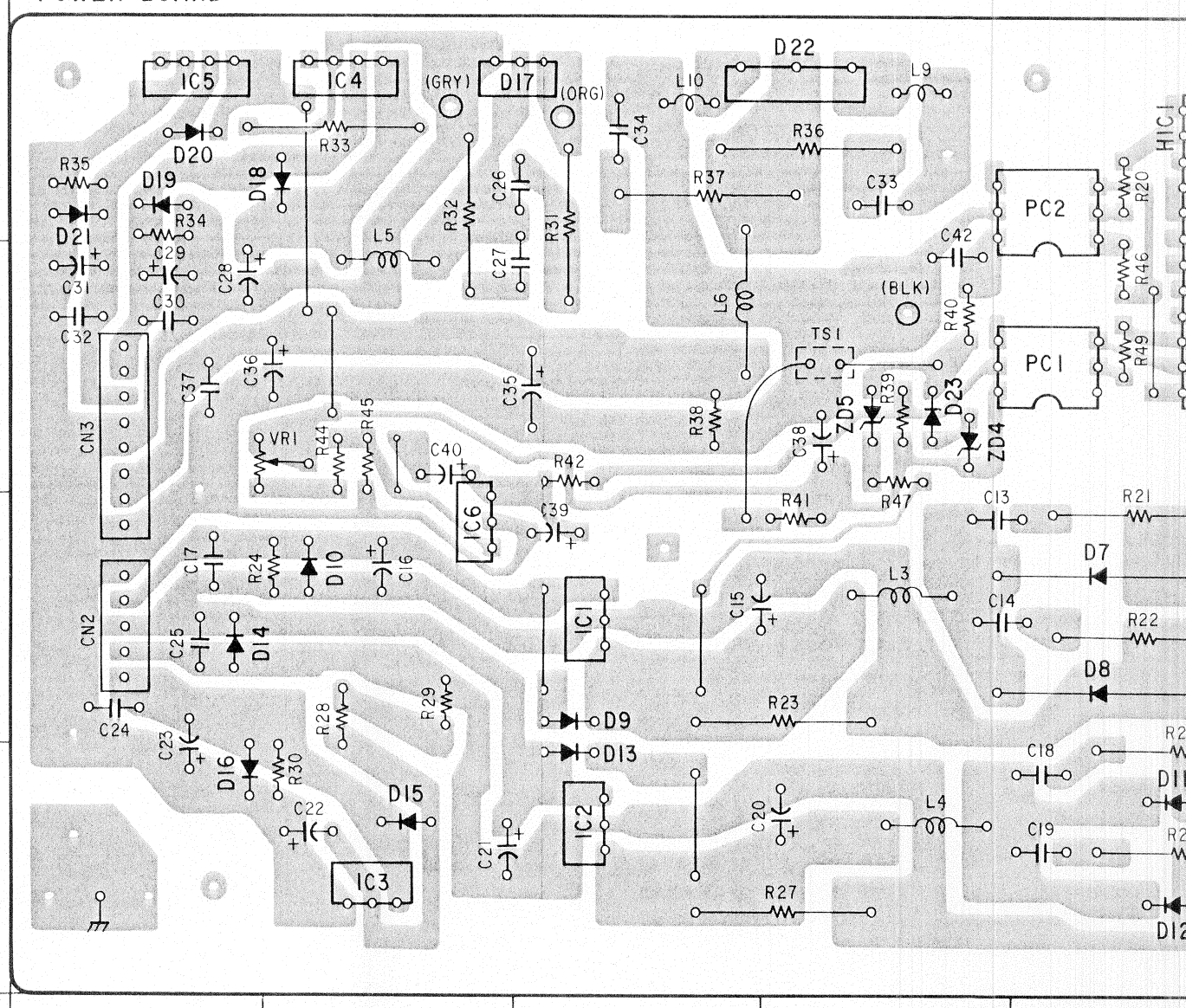
FU-123 (FUSE) /POWER BLOCK PRINTED WIRING BOARD

– Ref No. FU-123 BOARD : 3,000 Seriese –

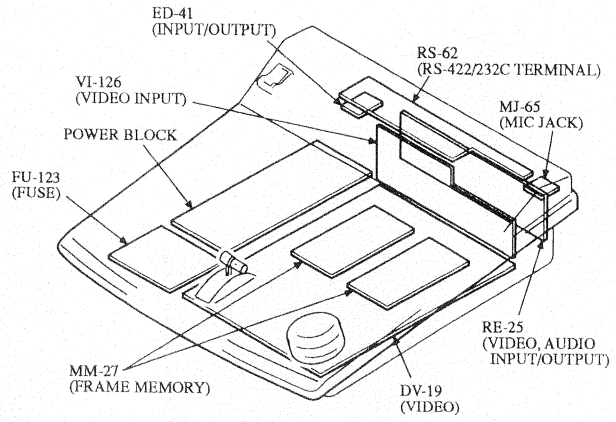
FU-123 BOARD (SIDE A)



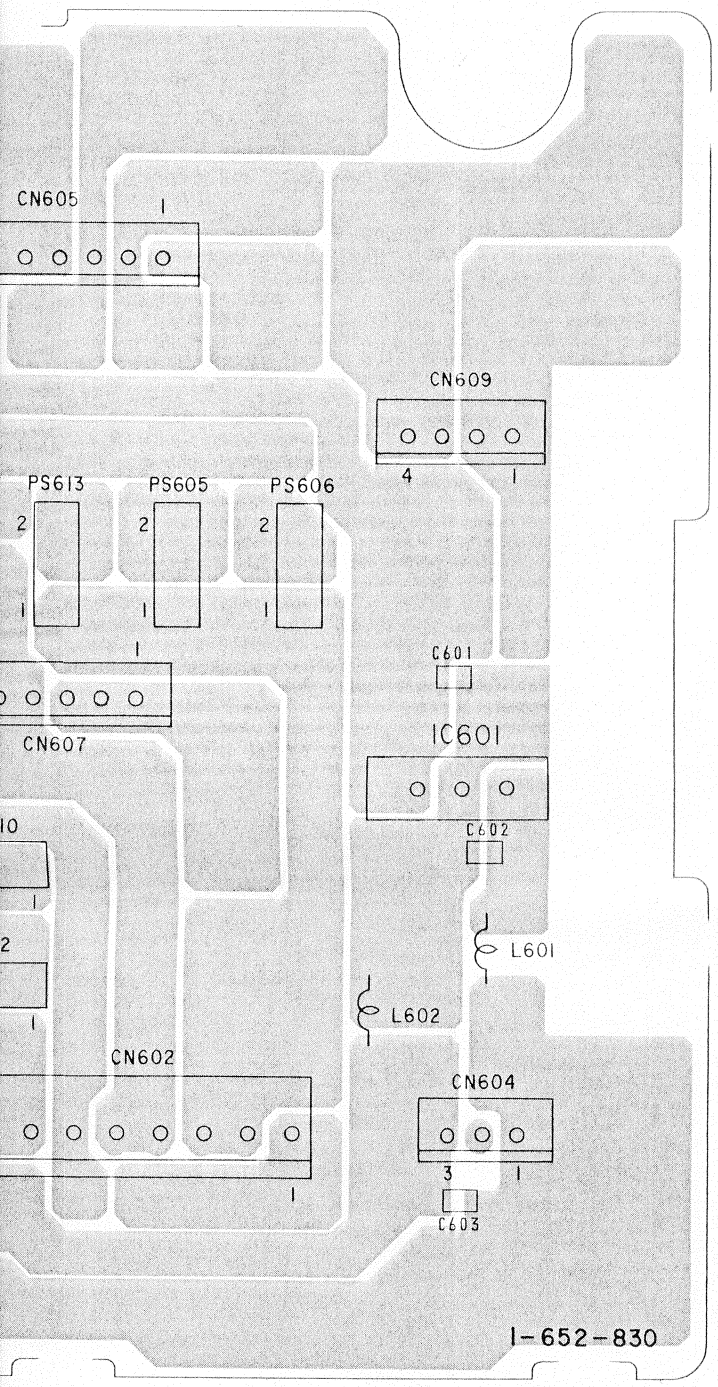
POWER BOARD

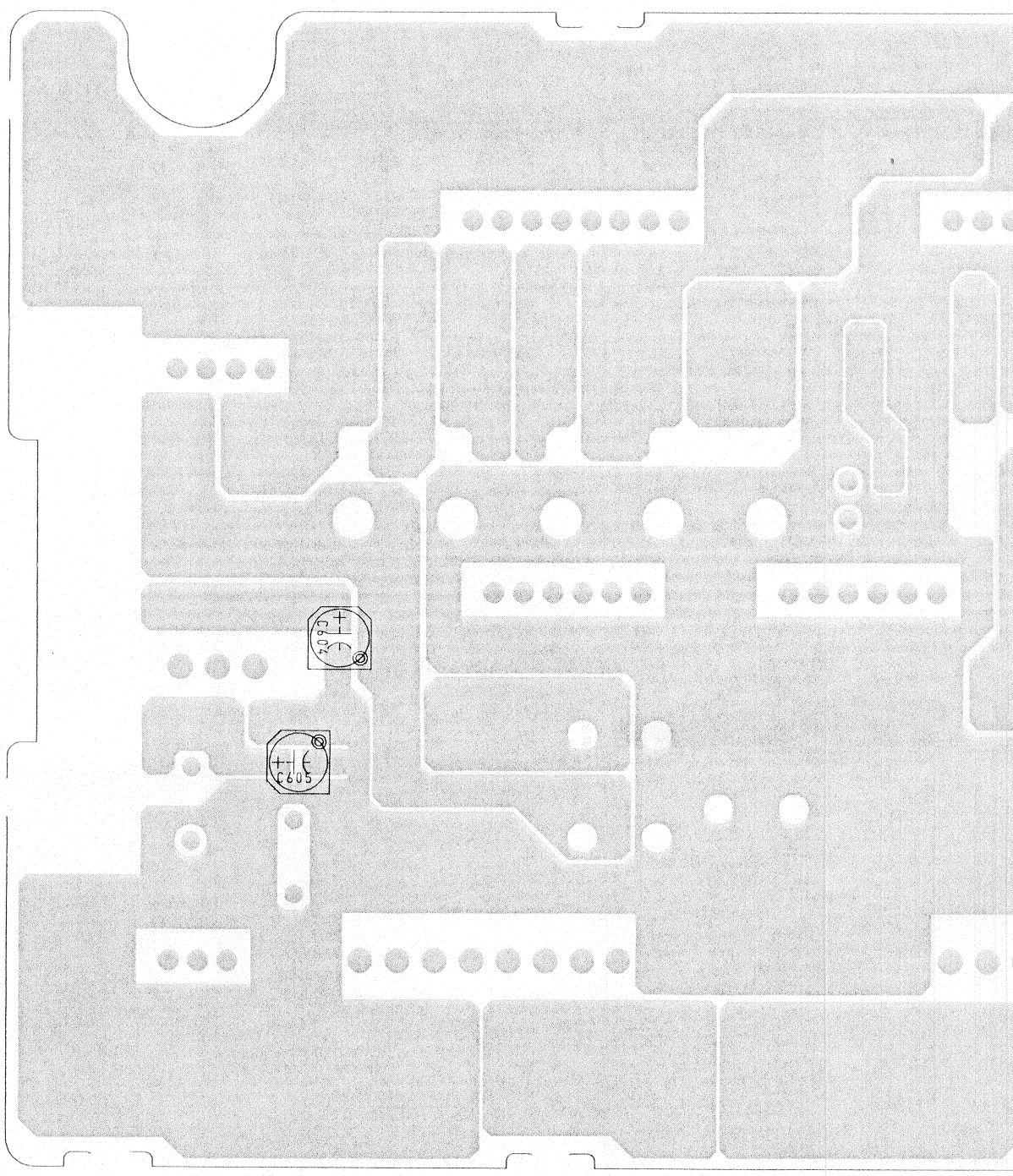


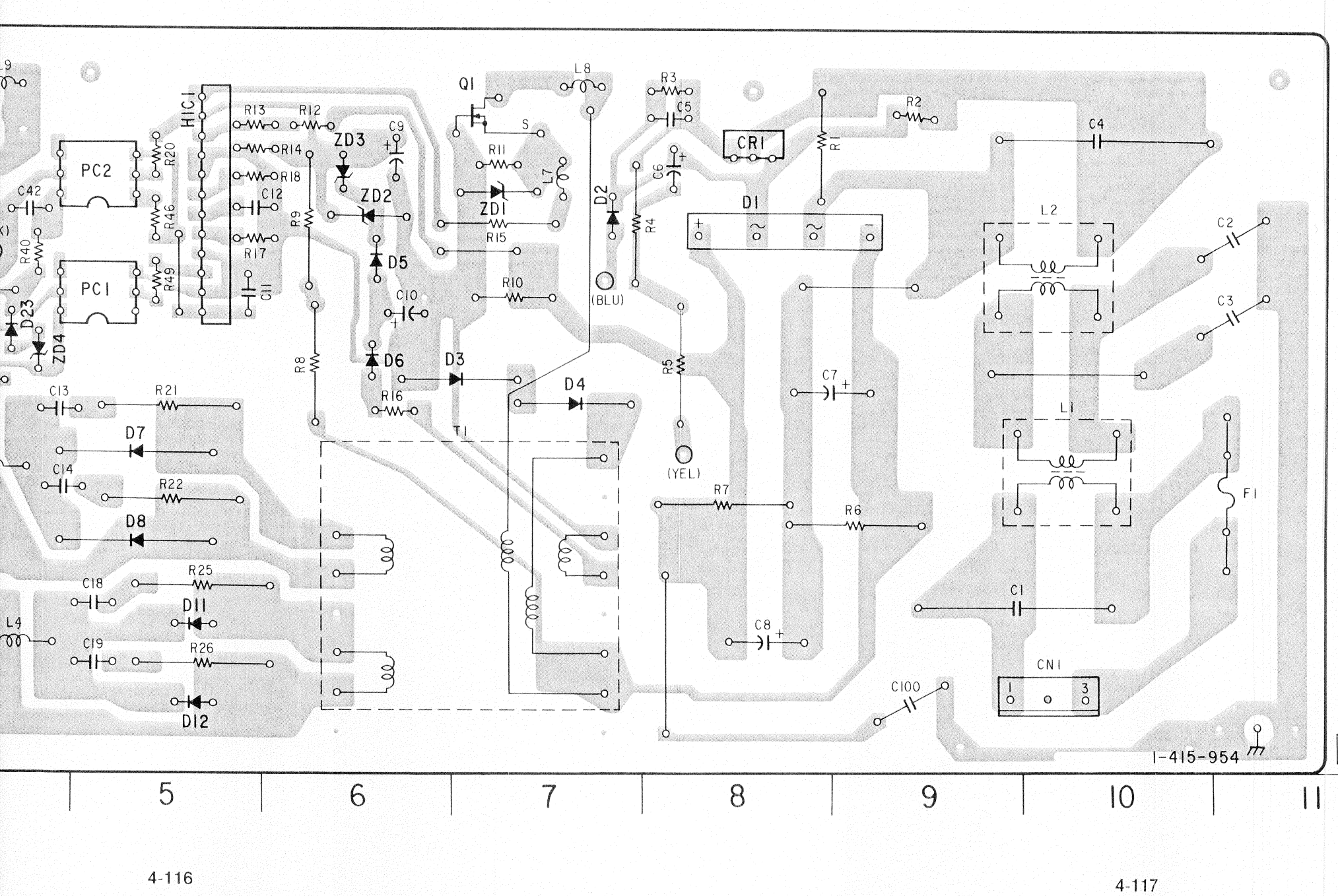
FU-123 BOARD		POWER BLOCK	
CN601	D-2	CN001	I-10
CN602	D-4	CN002	H-1
CN603	A-2	CN003	G-1
CN604	D-6		
CN605	A-4	D001	G-8
CN606	C-2	D002	G-7
CN607	C-4	D003	G-7
CN608	C-3	D004	H-7
CN609	B-6	D005	G-6
		D006	G-6
IC601	C-6	D007	H-5
		D008	H-5
		D009	H-3
		D010	H-2
		D011	I-5
		D012	I-5
		D013	I-3
		D014	H-1
		D015	I-2
		D016	I-1
		D017	F-2
		D018	F-2
		D019	F-1
		D020	F-1
		D021	F-1
		D022	F-4
		D023	G-4
		IC001	H-3
		IC002	I-3
		IC003	I-2
		IC004	F-2
		IC005	F-1
		IC006	H-2
		Q001	F-7
		ZD001	F-7
		ZD002	F-6
		ZD003	F-6
		ZD004	G-4
		ZD005	G-4



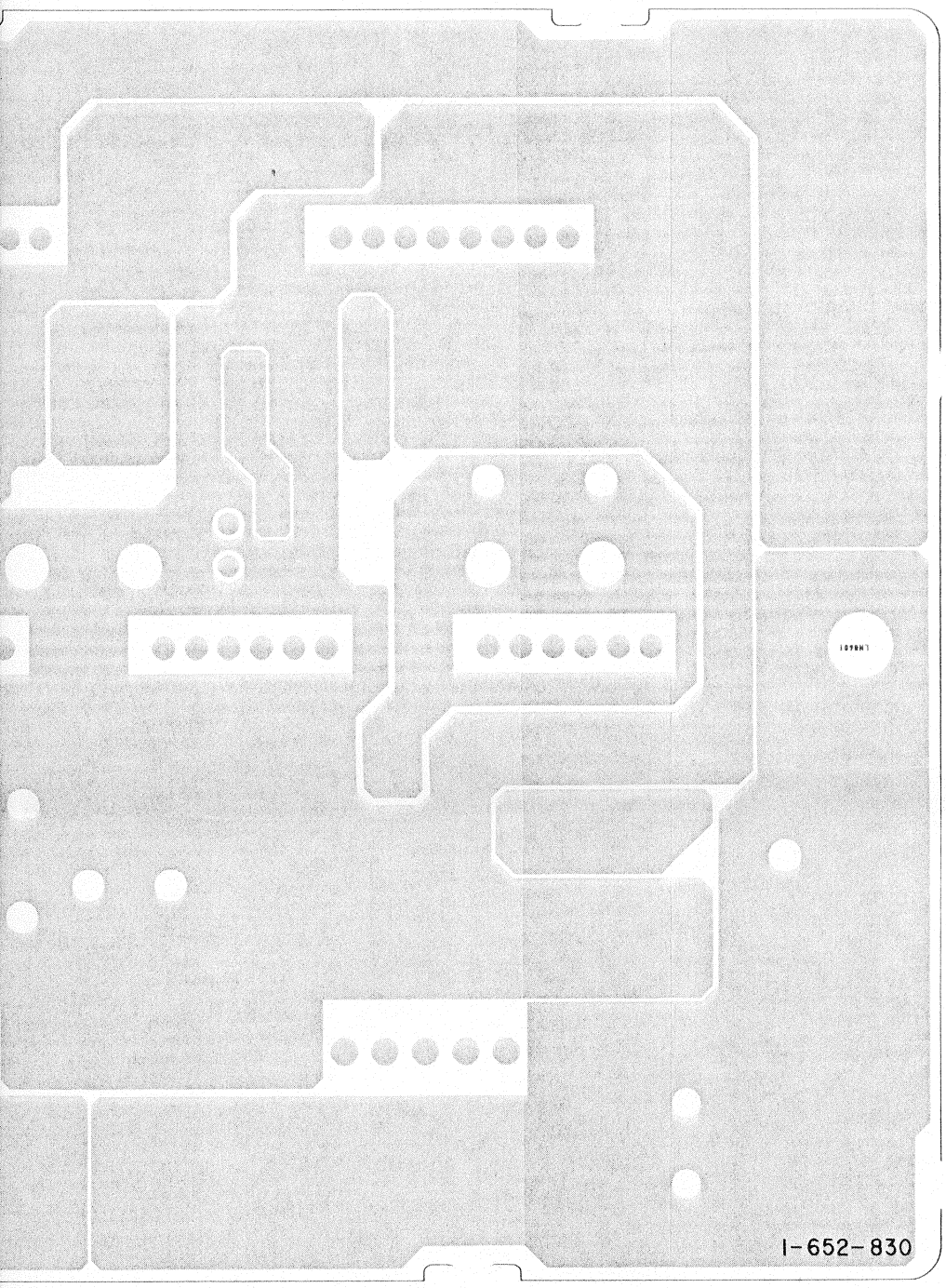
FU-123 BOARD (SIDE B)

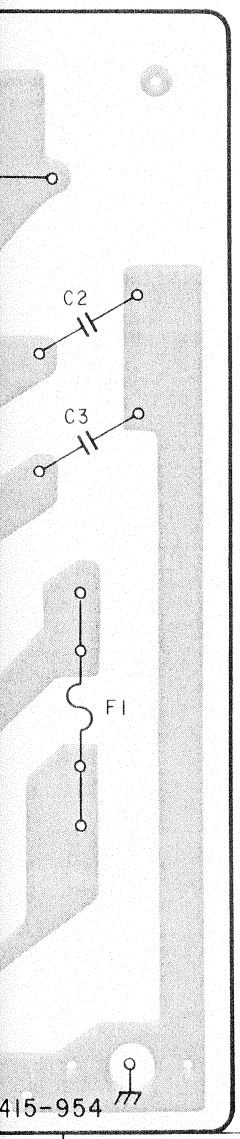






5 6 7 8 9 10 11





11 12 13

FUSE / POWER

• Main Microcomputer (DV-19 Board IC730:M37702M4)

Pin No.	Pin Name	I/O	Description
1	AD A AFC		A/D channel 0 LINE A AFC voltage check pin
2	SCROLL B CS	O	MM-27 (B) IC chip select
3	SCROLL A CS	O	MM-27 (A) IC chip select
4			Not used
5			Not used
6	RVD	I	Read system VD interrupt pin
7	MASTER CS	I	Chip select interrupt pin from CP-64 board IC500
8	MEM B CS	O	MM-27 (B) IC301 chip select
9	MEM A CS	O	MM-27 (A) IC301 chip select
10	EE1 CS	O	EEROM1 chip select
11	EE1 RD	I	EEROM1 read data input
12	EE1 WR	O	EEROM1 write data output
13	EE1 CLK	O	EEROM1 clock
14	EE0 CS	O	EEROM0 chip select
15	EE0 RD	I	EEROM0 read data input
16	EE0 WR	O	EEROM0 write data output
17	EE0 CLK	O	EEROM0 Clock
18			Not used
19	VIDEO S/P CS	O	VI-126 IC208/209 serial-parallel chip select
20	DA2 LD	O	DA converter 2/3 data load timing output
21	DA2 DATA	O	DA converter 2/3 data output
22	DA2 CLK	O	DA converter 2/3 shift clock output
23	DA01 LD	O	DA converter 0/1 data load timing output
24	DA01 DATA	O	DA converter 0/1 data output
25	DA01 CLK	O	DA converter 0/1 shift clock output
26	BYTE	I	BYTE/WORD mode select pin (GND)
27	CNVSS	I	GND
28	RESET	I	Reset pin (L : reset H : operation starts.)
29	XIN	I	CPU main clock input pin (16MHz)
30	XOUT	O	CPU clock output pin (not used)
31		O	Not used
32	VSS	I	GND
33	IORD	O	I/O expander (IC711) data read timing
34	A2	O	I/O expander (IC711) address bus A2
35	A1	O	I/O expander (IC711) address bus A1
36	A0	O	I/O expander (IC711) address bus A0
37	D7	O	Wipe microprocessor, memory microprocessor data bus D7
38	D6	O	Wipe microprocessor, memory microprocessor data bus D6
39	D5	O	Wipe microprocessor, memory microprocessor data bus D5
40	D4	O	Wipe microprocessor, memory microprocessor data bus D4
41	D3	O	Wipe microprocessor, memory microprocessor data bus D3
42	D2	O	Wipe microprocessor, memory microprocessor data bus D2
43	D1	O	Wipe microprocessor, memory microprocessor data bus D1
44	D0	O	Wipe microprocessor, memory microprocessor data bus D0

Pin No.	Pin Name	I/O	Description
45	IOWR	O	I/O expander (IC711) data write timing
46	IOCS	O	I/O expander (IC711) chip select
47	WIPE CS	O	Wipe microprocessor chip select
48	WIPE CLK	O	Wipe microprocessor data load timing clock
49	CO RESET	O	Reset pulse output to wipe microprocessor, memory microprocessor
50	MEM BUSY	I	Memory microprocessor busy (notifying the period of time when data reception is impossible)
51	MEM CS	O	Memory microprocessor chip select
52	MEM CLK	O	Memory microprocessor data load timing clock
53	I/O7	I/O	I/O expander data bus D7
54	I/O6	I/O	I/O expander data bus D6
55	I/O5	I/O	I/O expander data bus D5
56	I/O4	I/O	I/O expander data bus D4
57	I/O3	I/O	I/O expander data bus D3
58	I/O2	I/O	I/O expander data bus D2
59	I/O1	I/O	I/O expander data bus D1
60	I/O0	I/O	I/O expander data bus D0
61	TXD1	O	Video signal serial data (MM-27, VI-126)
62	RXD1	I	Serial data input (not used)
63	CLK1	O	Video signal serial transfer clock
64	RTS1 • CTS1	I/O	Serial port 1 send/receive status (not used)
65	SOUT0	O	Master microprocessor (CP64IC500) serial communication data output
66	SIN0	I	Master microprocessor (CP64IC500) serial communication data input
67	CLK0	I	Master microprocessor (CP64IC500) serial communication data clock input
68	RTS0	O	Master microprocessor (CP64IC500) serial communication data enable (ready) pin
69	VCC	I	Digital circuit power supply (5V)
70	AVCC	I	Analog circuit power supply (A/D converter 5V)
71	VREF	I	Conversion reference voltage (5V) for A/D converter
72	AVSS	I	Analog circuit GND
73	VSS	I	Digital circuit GND
74	AN7		A/D converter channel 7 input pin (not used)
75	AN6		A/D converter channel 6 input pin (not used)
76	AN5		A/D converter channel 5 input pin (not used)
77	AN4		Channel 4 EVR36 analog port voltage monitoring
78	AN3		Channel 3 burst SC PLL control voltage check pin
79	AN2		Channel 2 PAL 908FH control voltage check pin
80	AN1		Channel 1 LINE B AFC voltage check pin

• I/O Expander (DV-19 board IC711:CXD1095Q)

Pin No.	Pin Name	I/O	Description
1	No connection		No connection
2	No connection		No connection
3	BC G	O	Border color (green)
4	BC B	O	Border color (blue)
5	BC B/W	O	Border color (black/white)
6	BLKA	O	Back color (H : black L : video) LINE A
7	BLKB	O	Back color (H : black L : video) LINE B
8	BC 50	O	Border color (luminance level 50 % : -6dB)
9	BDRON	O	Border ON (border during wipe)
10	VSS	I	GND
11	READ O/E	I	Read circuit ODD/EVEN (L : ODD H : EVEN)
12	CG V DET	I	Video signal exists or not in the monitor output circuit (H : exist L : not exist)
13	A V DET	I	LINE A : video signal exists or not (H : exist L : not exist)
14	B V DET	I	LINE B : video signal exists or not (H : exist L : not exist)
15	CUE OUT 1	I	CUE OUT 1 signal timing (master microprocessor outputs the signal)
16	CUE OUT 2	I	CUE OUT 2 signal timing (master microprocessor outputs the signal)
17	CUE IN	I	CUE IN signal timing (input from external peripherals)
18	PAL/NT	I	H = PAL L = NTSC
19	No connection		No connection
20	K0	O	Wipe or mix key select BIT 0
21	K1	O	Wipe or mix key select BIT 1
22	K2	O	Wipe or mix key select BIT 2
23	SOLA ON	O	Gate array key of the chroma key and luminance key switch ON
24	MOUT SEL	O	Monitor output select (H : program out L : source)
25	VSS	I	GND
26	VDD	I	Power supply (5V)
27			Not used
28			Not used
29			Not used
30	D0	I/O	Main microprocessor data bus D0
31	D1	I/O	Main microprocessor data bus D1
32	D2	I/O	Main microprocessor data bus D2
33	No connection		No connection
34	No connection		No connection
35	D3	I/O	Main microprocessor data bus D3
36	D4	I/O	Main microprocessor data bus D4
37	D5	I/O	Main microprocessor data bus D5
38	D6	I/O	Main microprocessor data bus D6
39	D7	I/O	Main microprocessor data bus D7
40	CLR	I	Clear pin
41	ODEN	I	High output impedance at each port
42	VSS	I	GND
43	WR	I	Main microprocessor communication timing (write)
44	RD	I	Main microprocessor communication timing (read)

Pin No.	Pin Name	I/O	Description
45	CS	I	Main microprocessor communication chip select
46	A0	I	Main microprocessor communication address bus A0
47	A1	I	Main microprocessor communication address bus A1
48	A2	I	Main microprocessor communication address bus A2
49			Not used
50			Not used
51	No connection		No connection
52			Not used
53			Not used
54	M0	O	Audio monitor output select BIT 0
55	M1	O	Audio monitor output select BIT 1
56	M2	O	Audio monitor output select BIT 2
57	VSS	I	GND
58	VDD	I	Power supply (5V)
59			Not used
60	B0	O	Audio B bus source select BIT 0
61	B1	O	Audio B bus source select BIT 1
62	A0	O	Audio A bus source select BIT 0
63	A1	O	Audio A bus source select BIT 1
64	BC R	O	Border color (red)

• DA Converter (DV-19 board IC704:M62352)

Pin No.	Pin Name	Description
2	EV27	Color plus LINE A (red)
3	EV28	Color plus LINE A (blue)
4	EV29	Video setup level
5	EV30	Video white level
6	EV31	Video sync level
7		
8		
9		
12		
13	EV36	Connected to the main microprocessor (for checking D/A converter operation)
18	EV25	Color correction (red)
19	EV26	Color correction (blue)

• DA Converter (DV-19 board IC705:M62352)

Pin No.	Pin Name	Description
2	EV3	Write circuit Y level adjustment LINE A
3	EV4	Write circuit Y level adjustment LINE B
4	EV5	Read circuit Y level adjustment LINE A
5	EV6	Read circuit Y level adjustment LINE B
6	EV7	Fader Y level adjustment LINE A (not used)
7	EV8	Fader Y level adjustment LINE B (not used)
8	EV9	Center adjustment LINE A
9	EV10	Center adjustment LINE B
12	EV11	Audio attenuation level LINE A
13	EV12	Audio attenuation level LINE B
18	EV1	Y/C separation Y level adjustment LINE A
19	EV2	Y/C separation Y level adjustment LINE B

• DA Converter (DV-19 board IC706:M62352)

Pin No.	Pin Name	Description
2	EV15	Write circuit C level adjustment LINE A
3	EV16	Write circuit C level adjustment LINE B
4	EV17	Read circuit C level adjustment LINE A
5	EV18	Read circuit C level adjustment LINE B
6	EV19	Fader C level adjustment LINE A (not used)
7	EV20	Fader C level adjustment LINE B (not used)
8	EV21	HUE adjustment LINE A
9	EV22	HUE adjustment LINE B
12	EV23	Video mix level LINE A
13	EV24	Video mix level LINE B
18	EV13	Y/C separation C level adjustment LINE A
19	EV14	Y/C separation C level adjustment LINE B

• DA Converter (DV-19 board IC707:M62352)

Pin No.	Pin Name	Description
2	EV39	Color plus LINE B (red)
3	EV40	Color plus LINE B (blue)
4	EV41	Chroma key comparator level (threshold level)
5		
6	EV43	Border color luminance level adjustment
7	EV44	Border color chrominance level adjustment
8		
9		
12	EV48	A-bus APL adjustment during soft wipe
13		
18	EV37	Chroma key color information (red)
19	EV38	Chroma key color information (blue)

• Master Microcomputer (CP-64 board IC500:M37732S4AFP)

Pin No.	Pin Name	I/O	Description
1	AN0	I	CXD1500Q (67pin) during "H" output
2	TB2IN	O	CXD1500Q (67pin) during "L" output
3	TB1IN	O	Not used
4	TB0IN	O	Not used
5	$\overline{\text{UART2 INT}}$	I	"L" level interrupt
6	$\overline{\text{CXD15 INT}}$	I	"L" level interrupt
7	$\overline{\text{UART1 INT}}$	I	"L" level interrupt
8	TA4IN	O	Not used
9	TA4OUT	O	Not used
10	TA3IN	I	Not used
11	BUZZER OUT	O	BUZZER OUT
12	TA2IN	I	Not used
13	TA2OUT	O	Not used
14	TA1IN	I	Not used
15	TA1OUT	O	Not used
16	RVD	I	↓ edge interrupt
17	TA0OUT	O	Not used
18	$\overline{\text{CG CS}}$	O	Chip select (active "L")
19	$\overline{\text{EE CS}}$	O	Chip select (active "L")
20	$\overline{\text{BUSY}}$	I	READY, $\overline{\text{BUSY}}$ status signal input
21	EERST	O	Reset output (active "H")
22	$\overline{\text{OSDCS}}$	O	Chip select (active "L")
23	0	O	X/2 output
24	$\overline{\text{RDY}}$	I	CPU is ready state during "L" level
25	$\overline{\text{HOLD}}$	I	
26	BYTE	I	External data width →16 bit width
27	CNVSS	I	
28	$\overline{\text{RESET}}$	I	Reset input
29	X IN	I	Input/output to and from internal clock generator circuit (16MHz)
30	X OUT	O	Input/output to and from internal clock generator circuit (16MHz)
31	$\overline{\text{E}}$	O	Reading the data or the instruction code, or data write is executed during "L" level.
32	VSS		
33	$\overline{\text{HLDA}}$	O	"L" level is output during holding time.
34	ALE	O	Used to read address only from the multiplexed signal of address and data.
35	$\overline{\text{BHE}}$	O	When accessing to odd numbered address, this pin goes to "L" level.
36	R/$\overline{\text{W}}$	O	Reading during "H"level. Writing during "L"level.
37	A23/D7	I/O	When $\overline{\text{E}}$ output is "L", the data bus lower 8 bits are output. When $\overline{\text{E}}$ output is "H", the address bus higher 8 bits are output.
38	A22/D6	I/O	
39	A21/D5	I/O	
40	A20/D4	I/O	
41	A19/D3	I/O	
42	A18/D2	I/O	
43	A17/D1	I/O	
44	A16/D0	I/O	

Pin No.	Pin Name	I/O	Description
45	A15/D15	I/O	When $\overline{\text{E}}$ output is "L", the data bus higher 8 bits are output. When $\overline{\text{E}}$ output is "H", the address bus middle 8 bits are output.
46	A14/D14	I/O	
47	A13/D13	I/O	
48	A12/D12	I/O	
49	A11/D11	I/O	
50	A10/D10	I/O	
51	A9/D9	I/O	
52	A8/D8	I/O	
53	A7	O	The address bus lower 8 bits are output.
54	A6	O	
55	A5	O	
56	A4	O	
57	A3	O	
58	A2	O	
59	A1	O	
60	A0	O	
61	TXD1	O	Serial data output pin
62	RXD1	I	Serial data input pin
63	CLK1	O	Serial clock output pin
64	$\overline{\text{RTS1}}$	O	
65	TXD0	O	Serial data output pin
66	RXD0	I	Serial data input pin
67	CLK0	O	Serial clock output pin
68	$\overline{\text{CTS0}}$	I	
69	VCC		Receive status
70	AVCC		Power voltage input pin to the A/D converter
71	VREF	I	Reference voltage input pin to the A/D converter
72	AVSS		Power voltage input pin to the A/D converter
73	VSS		
74	AN7	I	
75	AN6	I	During "H" output of CXD1500Q (67pin) During "L" output of CXD1500Q (67pin)
76	AN5	I	During "L" output of CXD1500Q (67pin) During "L" output of CXD1500Q (67pin)
77	AN4	I	During "L" output of CXD1500Q (67pin) During "L" output of CXD1500Q (67pin)
78	AN3	I	During "L" output of CXD1500Q (67pin) During "L" output of CXD1500Q (67pin)
79	AN2	I	During "L" output of CXD1500Q (67pin) During "L" output of CXD1500Q (67pin)
80	AN1	I	During "L" output of CXD1500Q (67pin) During "L" output of CXD1500Q (67pin)

• CPG, PTC, PIU, ICU (CP-64 board IC518:CXD1500Q)

Pin No.	Pin Name	I/O	Description
1	F/$\overline{X}$	I	Internal oscillator clock and external clock input select pin
2	X1	I	Connect an external crystal oscillator (14.7456MHz)
3	X2	I	Connect an external crystal oscillator (14.7456MHz)
4	OSC	O	The same frequency as the crystal oscillator is output from this pin.
5	RESET	O	Power-ON reset signal output pin
6	$\overline{RESIN}$	I	Reset input.
7	GND		
8	$\overline{RD}$	I	Read-out control common input pin
9	$\overline{WR}$	I	Write-down control common input pin
10	A0	I	Common address input pin : A1
11	A1	I	Common address input pin : A2
12	$\overline{CS\ 54}$	I	PTC block select input pin
13	$\overline{CS\ 55}$	I	PIU block select input pin
14	$\overline{CS\ 59}$	I	ICU block select input pin
15	D0	I/O	Data input and output pins between MPU and each internal functional blocks
16	D1	I/O	
17	D2	I/O	
18	D3	I/O	
19	D4	I/O	
20	D5	I/O	
21	D6	I/O	
22	D7	I/O	
23	$\overline{INTAK}$	I	
24	GND		
25	INTP0	I	"H" level interrupt
26	INTP1	I	"H" level interrupt
27	INTP2	I	"H" level interrupt
28	INTP3	I	"H" level interrupt
29	INTP4	I	Not used
30	INTP5	I	Not used
31	INTP6	I	Asynchronous type interrupt request input pin
32	INTP7	I	
33	VDD		
34	INT	O	Interrupt request output pin
35	$\overline{SV}$	I	
36	SA0	O	
37	SA1	O	
38	SA2	O	
39	CLK0	I	Clock input pin to the ϕ counter
40	GATE0	I	Input pin which controls the count inhibit and count initialize of the ϕ counter.
41	OUT0	O	614.4kHz which generates the clock rate of μPD72001
42	CLK1	I	Same as the CLK0
43	GATE1	I	Same as the GATE0
44	OUT1	O	2MHz system clock output to TMP82C79M
45	GND		
46	CLK2	I	Same as the CLK0

Pin No.	Pin Name	I/O	Description
47	GATE2	I	Same as the GATE0
48	OUT2	O	Same as the OUT0
49	DT0	I	DT0
50	DT1	I	DT1
51	DT2	I	DT2
52	DT3	I	DT3
53	DT4	I	DT4
54	DT5	I	DT5
55	H. JOG	I	H. JOG
56	FWD/REW	I	FWD/REV
57	CUE IN	I	CUE IN
58	R E/O	I	EVEN/ODD (not used)
59	P12	I	Not used
60	P13	I	Not used
61	P14	I	Not used
62	P15	I	Not used
63	P16	I	Not used
64	NT/PAL	I	NTSC/PAL = "L/H"
65	GND		
66	BUZZER ON	O	ON/OFF = "H/L"
67	CONT	O	A/D converter type select
68	CUE OUT2	O	CUE OUT2
69	CUE OUT1	O	CUE OUT1
70	$\overline{MASTER\ CS}$	O	Chip select (active "L")
71	$\overline{LED\ ON}$	O	ON/OFF = "L/H"
72	P26	O	
73	VDD		
74	P27	O	Port 2 output pin
75	CLK	O	4.9152MHz system clock output to μPD72001
76	READY	O	Output signal which is generated by synchronizing the RDY input signal.
77	RDY	I	Ready signal input pin on the system bus
78	EXFS	I	Clock signal input pin when the external clock signal is used as the oscillator.
79	PRCLK	O	2.4576MHz fundamental clock output to PTC counter # 0.
80	CKSYN	I	Input pin when multiple clock pulse generators are synchronized.

• OSD Microprocessor (CP-64 board IC501:CXP80P116Q-1)

Pin No.	Pin Name	I/O	Description
1	PA1	O	8-bit output port (port A)
2	PA0	O	8-bit output port (port A)
3	PB7	O	8-bit output port (port B)
4	PB6	O	8-bit output port (port B)
5	PB5	O	8-bit output port (port B)
6	PB4	O	8-bit output port (port B)
7	PB3	O	8-bit output port (port B)
8	PB2	O	8-bit output port (port B)
9	PB1	O	8-bit output port (port B)
10	PB0	O	8-bit output port (port B)
11	PC7	O	8-bit output port (port C)
12	PC6	O	8-bit output port (port C)
13	PC5	O	8-bit output port (port C)
14	PC4	O	8-bit output port (port C)
15	PC3	O	8-bit output port (port C)
16	PC2	O	8-bit output port (port C)
17	PC1	O	8-bit output port (port C)
18	PC0	O	8-bit output port (port C)
19	PD7	O	8-bit output port (port D)
20	PD6	O	8-bit output port (port D)
21	PD5	O	8-bit output port (port D)
22	PD4	O	8-bit output port (port D)
23	PD3	O	8-bit output port (port D)
24	DBG	O	Monitor output pin for debugging
25	$\overline{\text{CG CS}}$	O	Chip select (active "L")
26	$\overline{\text{CG SCK}}$	O	Serial clock output
27	PH3	O	4-bit output port (port H)
28	PH2	O	4-bit output port (port H)
29	PH1	O	4-bit output port (port H)
30	PH0	O	4-bit output port (port H)
31	MP	I	Single chip mode at "L" level
32	$\overline{\text{RST}}$	I	Reset input
33	VSS		
34	XTAL	O	An external crystal is connected for system clock oscillation (16MHz)
35	EXTAL	I	
36	$\overline{\text{CS0}}$	I	Chip select (active "L")
37	SI0	I	Not used
38	SO0	O	Serial data output pin
39	$\overline{\text{SCK0}}$	I	Serial clock input pin
40	$\overline{\text{CSI}}$	I	Chip select (active "L")
41	SI1	I	Serial data input pin
42	SO1	O	Serial data output pin (not used)
43	$\overline{\text{SCK1}}$	I	Serial clock input pin
44	AN7	I	Analog signal input pin to A/D converter
45	AN6	I	Analog signal input pin to A/D converter
46	AN5	I	Analog signal input pin to A/D converter

Pin No.	Pin Name	I/O	Description
47	AN4	I	Analog signal input pin to A/D converter
48	AN3	I	Analog signal input pin to A/D converter
49	AN2	I	Analog signal input pin to A/D converter
50	AN1	I	Analog signal input pin to A/D converter
51	AN0	I	Analog signal input pin to A/D converter
52	AVSS		GND pin of A/D converter
53	AVREF	I	Reference voltage input pin to A/D converter
54	AVDD		Positive power supply input to A/D converter
55	PG7	I	8 bit input port (port G)
56	PG6	I	8 bit input port (port G)
57	PG5	I	8 bit input port (port G)
58	PG4	I	8 bit input port (port G)
59	PG3	I	8 bit input port (port G)
60	PG2	I	8 bit input port (port G)
61	PG1	I	8 bit input port (port G)
62	PG0	I	Port E (higher 6 bits are output exclusive 8 bit port)
63	PE7	O	
64	PE6	O	
65	PE5	O	
66	PE4	O	
67	PE3	O	
68	PE2	O	
69	$\overline{\text{INT2}}$	I	Not used
70	$\overline{\text{INT0}}$	I	External interrupt input pin. Fall down edge active.
71	$\overline{\text{NMI}}$	I	Non-maskable interrupt request pin. Fall down edge active.
72	VDD		Positive power supply input
73	VSS		GND
74	NC		
75	PA7	O	8 bit output port (port A)
76	PA6	O	8 bit output port (port A)
77	PA5	O	8 bit output port (port A)
78	PA4	O	8 bit output port (port A)
79	PA3	O	8 bit output port (port A)
80	PA2PE7	O	8 bit output port (port A)

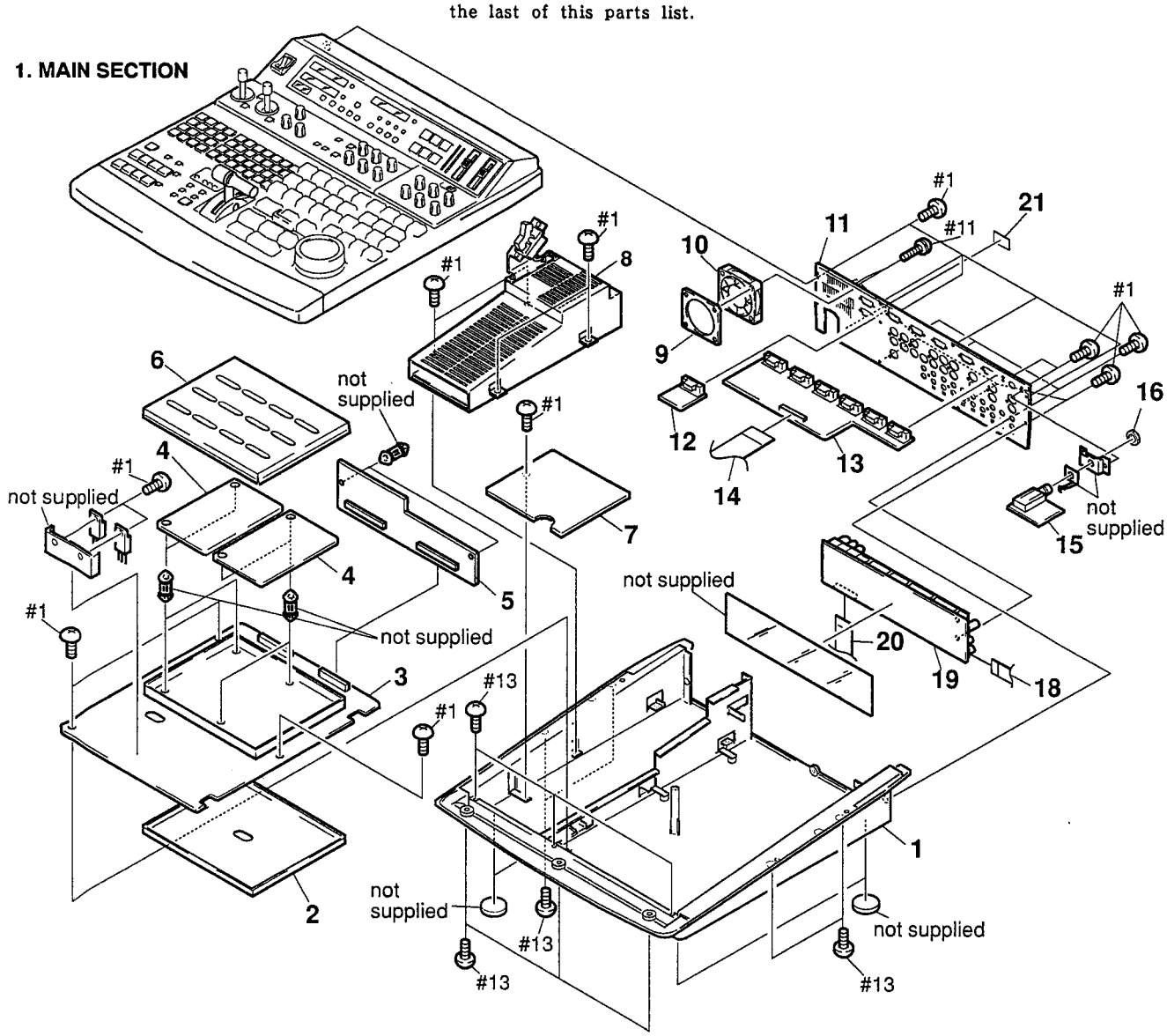
SECTION 6
EXPLODED VIEWS

NOTE:

- -XX, -X mean standardized parts, so they may have some differences from the original one.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware (# mark) list is given in the last of this parts list.

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

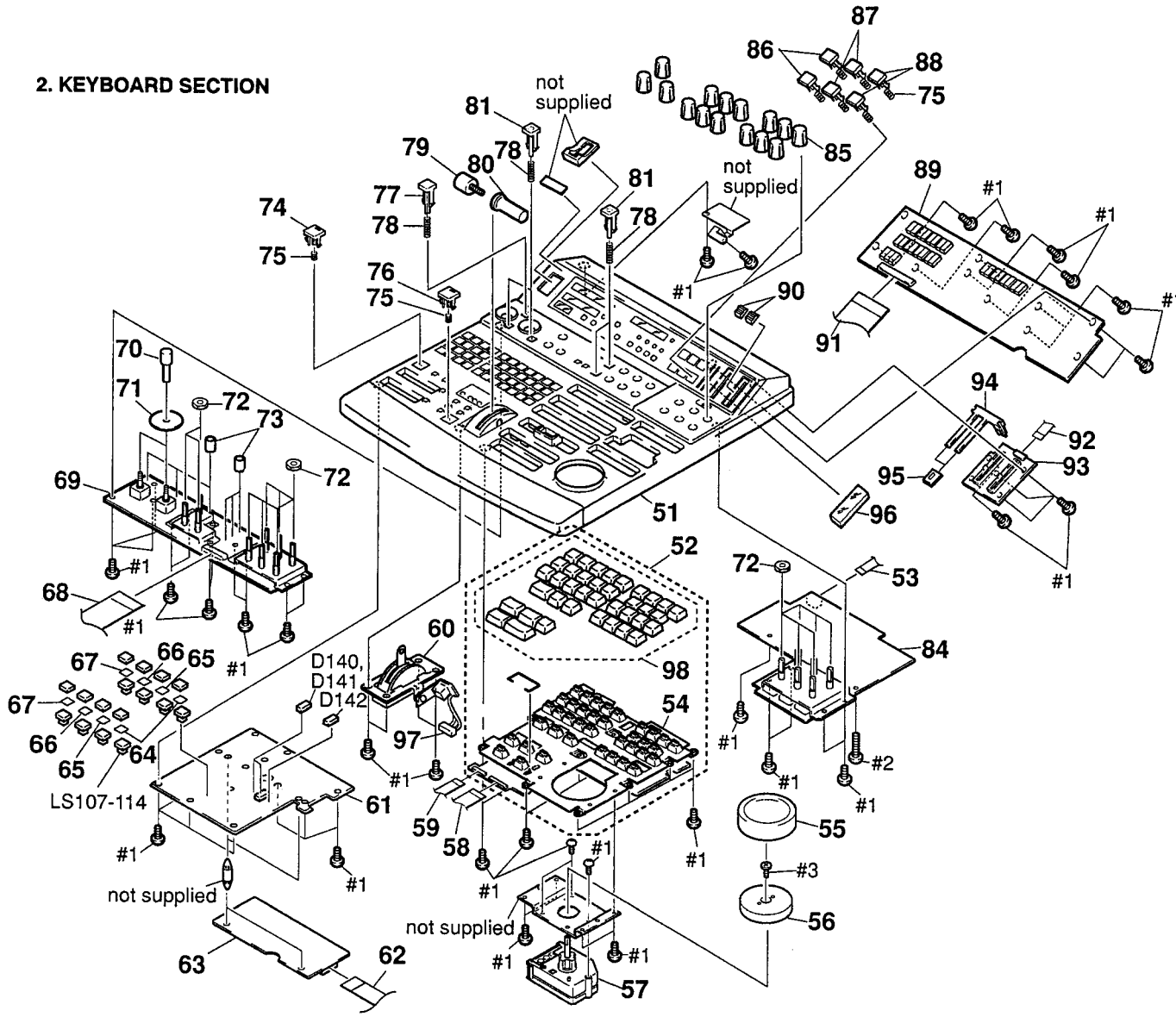
1. MAIN SECTION



Ref. No.	Part No.	Description	Remarks
* 1	X-3943-515-1	COVER ASSY, BOTTOM	
* 2	3-957-076-01	CASE (DV-19) (LOWER), SHIELD	
* 3	A-7066-121-A	DV-19 (P) BOARD, COMPLETE	
* 4	A-7066-127-A	MM-27 (P) BOARD, COMPLETE	
* 5	A-7066-126-A	VI-126 (P) BOARD, COMPLETE	
* 6	3-957-074-01	CASE (DV-19) (UPPER), SHIELD	
* 7	A-7066-120-A	FU-123 BOARD, COMPLETE	
⚠8	1-413-954-11	POWER BLOCK	
* 9	3-697-996-01	BRACKET, FAN	
10	1-541-684-31	MOTOR, DC	

Ref. No.	Part No.	Description	Remarks
* 11	3-956-990-01	PANEL, REAR	
* 12	A-7066-122-A	ED-41 BOARD, COMPLETE	
* 13	A-7066-124-A	RS-62 BOARD, COMPLETE	
14	1-751-565-11	CABLE, FLAT (FRS-14)	
* 15	A-7066-123-A	MJ-65 BOARD, COMPLETE	
16	3-684-465-01	NUT, HEXAGON	
18	1-751-560-11	CABLE, FLAT (FAI-1)	
* 19	A-7053-847-A	RE-25 BOARD, COMPLETE	
20	1-751-561-11	CABLE, FLAT (FAO-1)	
* 21	3-959-510-01	LABEL, MODEL NUMBER (NO. 2)	

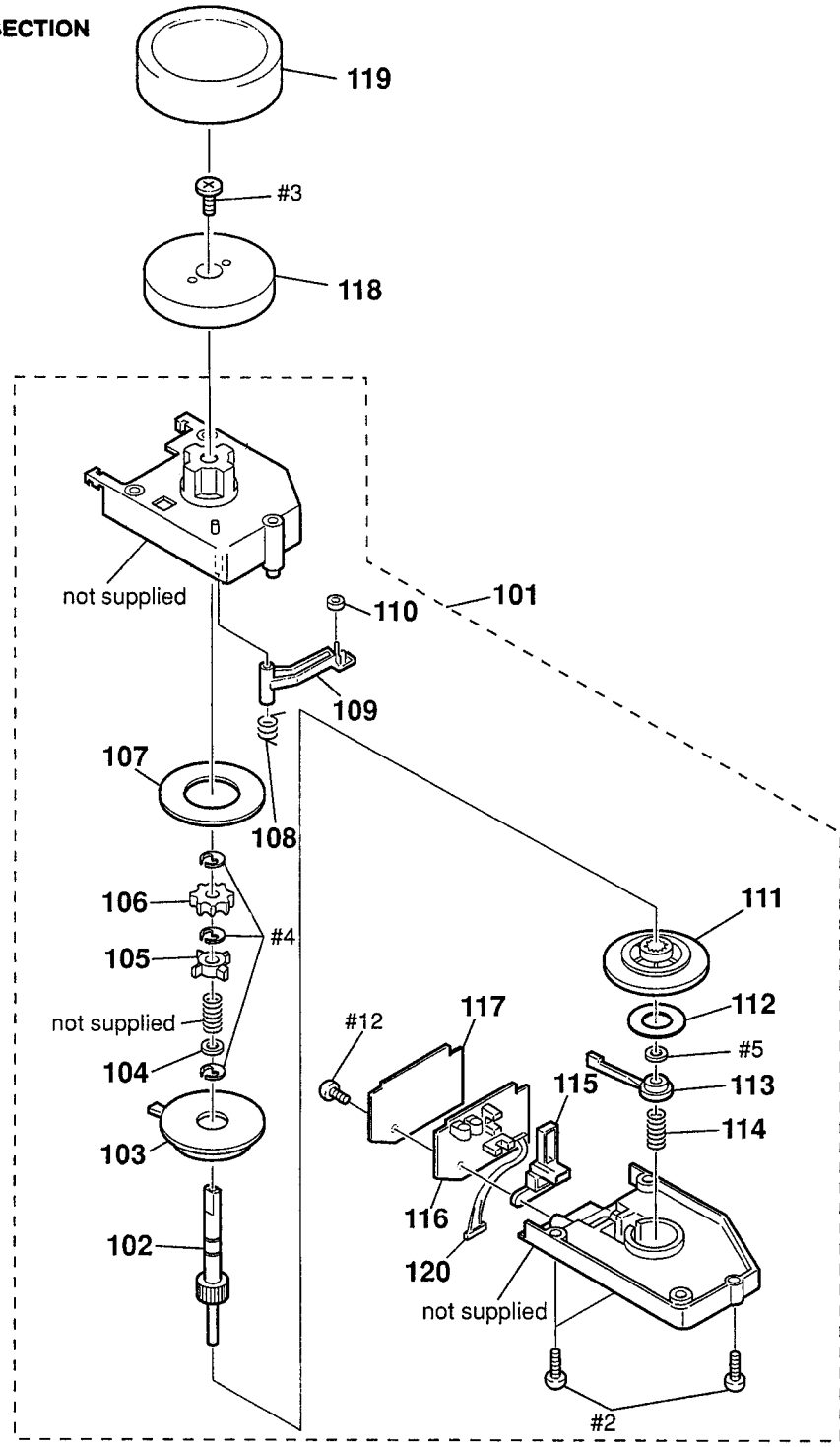
2. KEYBOARD SECTION



Ref. No.	Part No.	Description	Remarks
51	X-3944-189-2	COVER ASSY, TOP	
52	3-957-769-01	SET, KEY TOP	
53	1-751-569-11	CABLE, FLAT (FAC-1)	
54	1-649-632-11	KY-22 BOARD	
55	3-180-633-03	RUBBER, DIAL KNOB	
* 56	3-180-632-01	KNOB, DIAL	
* 57	A-6734-253-A	DIAL BLOCK ASSY, SERCH	
58	1-751-566-11	CABLE, FLAT (FKK-1)	
59	1-751-568-11	CABLE, FLAT (FKK-2)	
60	A-7092-190-A	FADER ASSY	
61	A-7063-837-A	KS-15 BOARD, COMPLETE	
62	1-751-564-11	CABLE, FLAT (FUP-1)	
* 63	A-7066-119-A	CP-64 (P) BOARD, COMPLETE	
64	3-956-994-31	SHEET, INDICATION (BKGD)	
65	3-956-994-21	SHEET, INDICATION (AUX)	
66	3-956-994-11	SHEET, INDICATION (P2)	
67	3-956-994-01	SHEET, INDICATION (P1)	
68	1-751-567-11	CABLE, FLAT (FJS-1)	
* 69	A-7066-118-A	JS-25 BOARD, COMPLETE	
70	3-956-977-01	STICK, JOY	
* 71	3-956-995-01	COVER, STICK	
72	2-118-268-01	NUT (M9), HEXAGON	
* 73	3-957-732-01	HOLDER, JS LED	
74	3-957-037-01	BUTTON (B-45) (AUDIO FOLLOW)	
75	3-957-040-01	SPRING (L), COMPRESSION	
76	3-957-038-01	BUTTON (B-46) (AUTO TRANS/PAUSE)	
77	3-957-007-01	BUTTON (G)	
78	3-957-039-01	SPRING (S), COMPRESSION	
79	3-956-978-01	GRIP (A)	

Ref. No.	Part No.	Description	Remarks
80	3-956-979-01	GRIP (B)	
81	3-957-004-01	BUTTON (F)	
84	A-7063-835-A	AM-32 BOARD, COMPLETE	
85	3-956-976-01	KNOB, ROTARY	
86	3-957-042-01	BUTTON (B-47) (P1)	
87	3-957-043-01	BUTTON (B-48) (P2)	
88	3-957-044-01	BUTTON (B-49) (AUX 1)	
89	A-7063-834-A	DP-46 BOARD, COMPLETE	
90	3-956-975-01	KNOB, SLIDE	
91	1-751-563-11	CABLE, FLAT (FDP-1)	
92	1-751-562-11	CABLE, FLAT (FAR-1)	
93	A-7063-833-A	AS-46 BOARD, COMPLETE	
* 94	3-957-048-01	COVER, SLIDE KNOB	
* 95	3-957-061-01	BASE, SLIDE KNOB	
96	1-520-503-11	METER UNIT, LED LEVEL	
97	1-562-148-11	HOUSING, 3P	
98	1-467-473-11	KEYBOARD BLOCK	
D140	8-719-913-53	LED LA-301VL (TRANSRATE 8)	
D141	8-719-913-53	LED LA-301VL (TRANSRATE 8)	
D142	8-719-913-53	LED LA-301VL (TRANSRATE 8)	
LS107	1-692-720-11	SWITCH, PUSH (LED) (A-BUS P1)	
LS108	1-692-720-11	SWITCH, PUSH (LED) (A-BUS P2)	
LS109	1-692-720-11	SWITCH, PUSH (LED) (A-BUS AUX)	
LS110	1-692-720-11	SWITCH, PUSH (LED) (A-BUS BKGD)	
LS111	1-692-720-11	SWITCH, PUSH (LED) (B-BUS P1)	
LS112	1-692-720-11	SWITCH, PUSH (LED) (B-BUS P2)	
LS113	1-692-720-11	SWITCH, PUSH (LED) (B-BUS AUX)	
LS114	1-692-720-11	SWITCH, PUSH (LED) (B-BUS BKGD)	

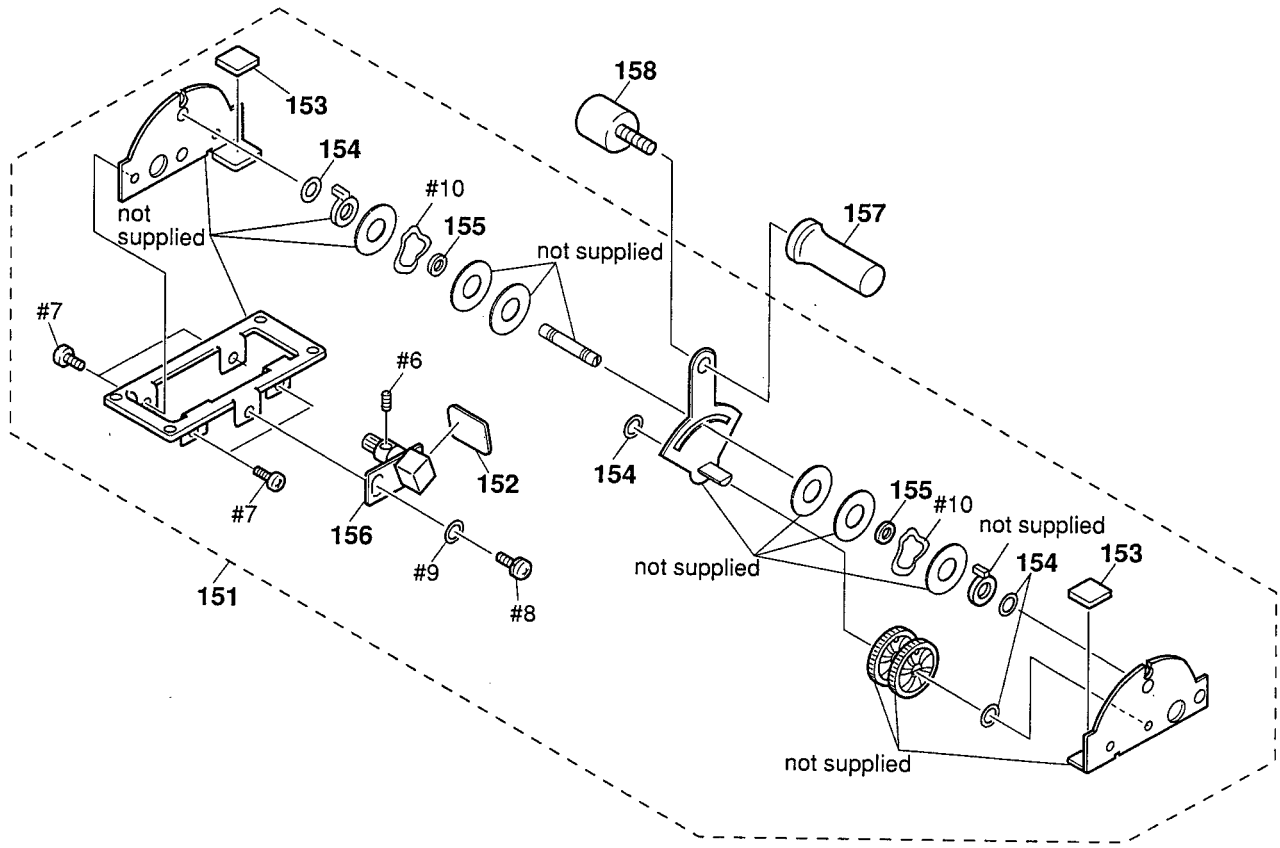
3. SEARCH DIAL SECTION



Ref. No.	Part No.	Description	Remarks
* 101	A-6734-253-A	DIAL BLOCK ASSY, SERCH	
* 102	X-2124-627-1	SHAFT SUB ASSY, MAIN	
* 103	2-143-602-03	CAM, SD	
104	3-701-443-21	WASHER, 5 DIA.	
* 105	2-143-604-01	GUIDE, LOCK OUT	
* 106	2-124-690-01	GUIDE, LOCK IN	
* 107	2-124-694-02	PLATE, CLUTCH	
108	2-143-613-01	SPRING, TORSION	
* 109	2-143-603-01	ARM, RETURN	
110	2-124-691-01	ROLLER	

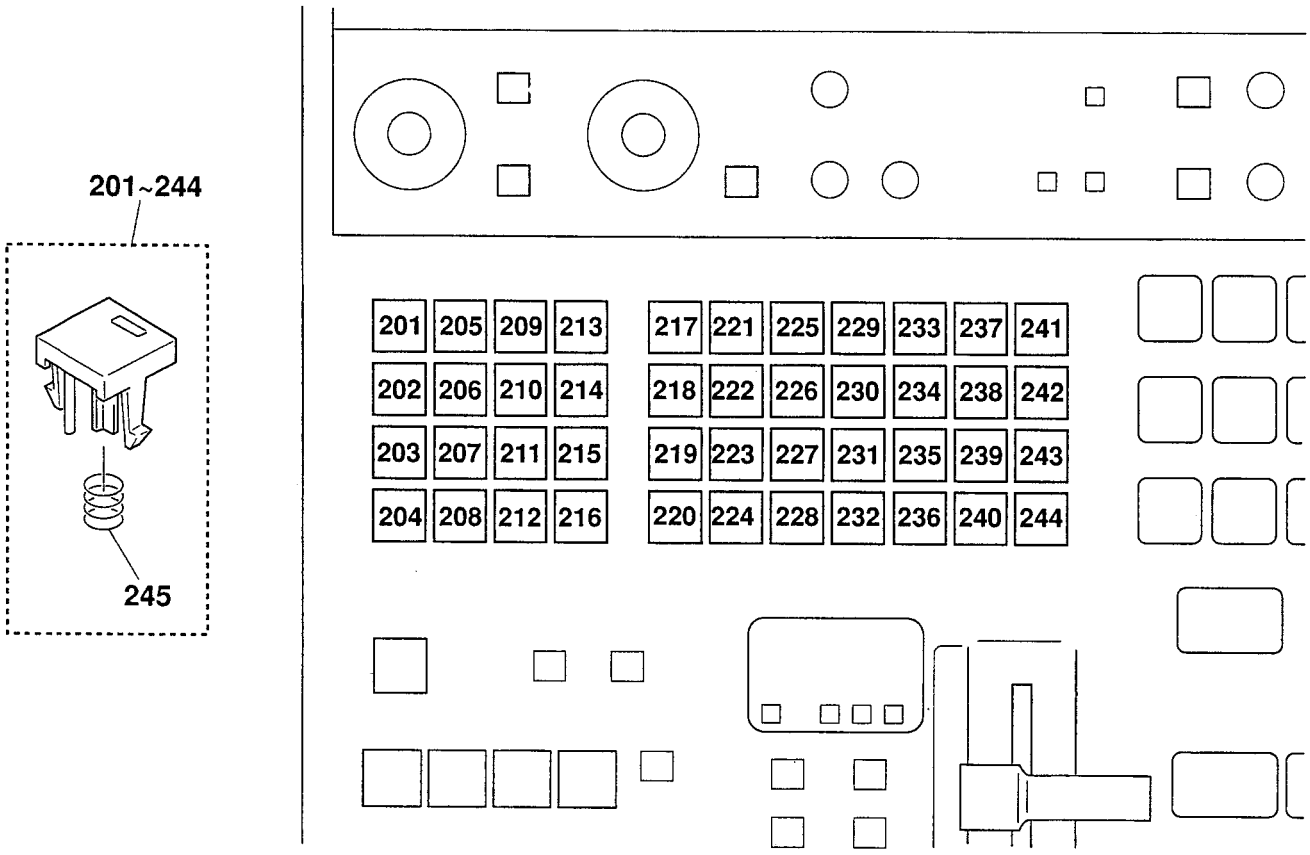
Ref. No.	Part No.	Description	Remarks
111	2-143-601-01	RING, FG	
* 112	2-124-695-01	PLATE, CUSHION	
113	2-124-693-02	PLATE	
* 114	2-124-692-01	SPRING, COMPRESSION	
* 115	2-124-699-02	HOLDER, SENSOR	
* 116	1-633-548-13	PTC-39 BOARD	
* 117	2-124-696-01	PROTECTOR, PTC	
* 118	3-180-632-01	KNOB, DIAL	
119	3-180-633-03	RUBBER, DIAL KNOB	
120	1-562-151-11	HOUSING, 6P	

4. FADER SECTION



Ref. No.	Part No.	Description	Remarks
151	A-7092-190-A	FADER ASSY	
* 152	1-617-831-11	VR-26 BOARD	
153	9-911-838-XX	CUSHION, STAY	
154	3-701-441-21	WASHER	
* 155	2-112-899-01	SPACER, RUBBER	
156	1-237-127-11	RES, VAR, CARBON 5K	
157	3-956-979-01	GRIP (B)	
158	3-956-978-01	GRIP (A)	

5. BUTTON SECTION



Ref. No.	Part No.	Description	Remarks
201	3-957-023-01	BUTTON (B-1) (7)	
202	3-957-024-01	BUTTON (B-2) (4)	
203	3-957-025-01	BUTTON (B-3) (1)	
204	3-957-026-01	BUTTON (B-4) (0)	
205	3-957-027-01	BUTTON (B-5) (8)	
206	3-957-028-01	BUTTON (B-6) (5)	
207	3-957-029-01	BUTTON (B-7) (2)	
208	3-957-030-01	BUTTON (B-8) (FS)	
209	3-957-031-01	BUTTON (B-9) (9)	
210	3-957-032-01	BUTTON (B-10) (6)	
211	3-957-033-01	BUTTON (B-11) (3)	
212	3-957-034-01	BUTTON (B-12) (BS)	
213	3-957-035-01	BUTTON (B-13) (+)	
214	3-957-036-01	BUTTON (B-14) (-)	
215	3-957-049-01	BUTTON (B-15) (CLR)	
216	3-957-050-01	BUTTON (B-16) (BNT)	
217	3-957-051-01	BUTTON (B-17) ( )	
218	3-957-052-01	BUTTON (B-18) ( )	
219	3-957-053-01	BUTTON (B-19) (SPLIT SLIDE)	
220	3-957-054-01	BUTTON (B-20) (SLIDE IN)	
221	3-957-055-01	BUTTON (B-21) ( )	
222	3-957-056-01	BUTTON (B-22) ( )	
223	3-957-057-01	BUTTON (B-23) ( )	

Ref. No.	Part No.	Description	Remarks
224	3-957-058-01	BUTTON (B-24) (SLIDE OUT)	
225	3-957-059-01	BUTTON (B-25) ( )	
226	3-957-060-01	BUTTON (B-26) ( )	
227	3-957-063-01	BUTTON (B-27) ( )	
228	3-957-064-01	BUTTON (B-28) (SCROLL)	
229	3-957-065-01	BUTTON (B-29) ( )	
230	3-957-066-01	BUTTON (B-30) ( )	
231	3-957-067-01	BUTTON (B-31) ( )	
232	3-957-068-01	BUTTON (B-32) (USER 1)	
233	3-957-069-01	BUTTON (B-33) ( )	
234	3-957-070-01	BUTTON (B-34) ( )	
235	3-957-071-01	BUTTON (B-35) ( )	
236	3-957-072-01	BUTTON (B-36) (USER 2)	
237	3-957-073-01	BUTTON (B-37) (NORMAL MIX)	
238	3-957-082-01	BUTTON (B-38) (MOSAIK MIX)	
239	3-957-013-01	BUTTON (B-39) (POSTRZ MIX)	
240	3-957-014-01	BUTTON (B-40) (B & W MIX)	
241	3-957-015-01	BUTTON (B-41) (LUMINA CLIP TRANS)	
242	3-957-016-01	BUTTON (B-42) (LUMINA KEY)	
243	3-957-017-01	BUTTON (B-43) (CHROMA KEY)	
244	3-957-018-01	BUTTON (B-44) (P in P)	
245	3-957-040-01	SPRING (L), COMPRESSION	

SECTION 7
ELECTRICAL PARTS LIST

AM-32

NOTE:

When indicating parts by reference number, please include the board name.

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX, -X mean standardized parts, so they may have some difference from the original one.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- CAPACITORS:
  uF: μF
- RESISTORS
  All resistors are in ohms.
  METAL: metal-film resistor
  METAL OXIDE: Metal Oxide-film resistor
  F: nonflammable
- COILS
  uH: μH
- SEMICONDUCTORS
  In each case, u: μ, for example:
  uA...: μA..., uPA..., μPA...,
  uPB..., μPB..., uPC..., μPC...,
  uPD..., μPD...

Ref. No.	Part No.	Description		Remarks
*	A-7063-835-A	AM-32 BOARD, COMPLETE		
		**********		
		(Ref. No. 1,000 Seriese)		
	2-118-268-01	NUT (M9), HEXAGON		
		< CAPACITOR >		
C001	1-162-971-11	CERAMIC CHIP 0.001uF		50V
C002	1-162-971-11	CERAMIC CHIP 0.001uF		50V
C003	1-126-204-11	ELECT CHIP 47uF	20%	16V
C004	1-162-971-11	CERAMIC CHIP 0.001uF		50V
C005	1-126-204-11	ELECT CHIP 47uF	20%	16V
C006	1-126-204-11	ELECT CHIP 47uF	20%	16V
C011	1-126-204-11	ELECT CHIP 47uF	20%	16V
C013	1-126-204-11	ELECT CHIP 47uF	20%	16V
C014	1-164-361-11	CERAMIC CHIP 0.047uF		16V
C015	1-126-204-11	ELECT CHIP 47uF	20%	16V
C016	1-164-361-11	CERAMIC CHIP 0.047uF		16V
C017	1-126-204-11	ELECT CHIP 47uF	20%	16V
C018	1-126-204-11	ELECT CHIP 47uF	20%	16V
C021	1-126-204-11	ELECT CHIP 47uF	20%	16V
C023	1-126-204-11	ELECT CHIP 47uF	20%	16V
C025	1-126-204-11	ELECT CHIP 47uF	20%	16V
C031	1-126-204-11	ELECT CHIP 47uF	20%	16V
C032	1-124-120-11	ELECT 220uF	20%	25V
C051	1-126-400-11	ELECT 22uF	20%	35V
C061	1-126-400-11	ELECT 22uF	20%	35V
C063	1-126-204-11	ELECT CHIP 47uF	20%	16V
C064	1-126-204-11	ELECT CHIP 47uF	20%	16V
C065	1-126-400-11	ELECT 22uF	20%	35V
C066	1-126-400-11	ELECT 22uF	20%	35V
C071	1-126-602-11	ELECT CHIP 3.3uF	20%	50V
C072	1-126-601-11	ELECT CHIP 2.2uF	20%	50V
C074	1-162-971-11	CERAMIC CHIP 0.001uF		50V
C075	1-126-400-11	ELECT 22uF	20%	35V
C076	1-126-400-11	ELECT 22uF	20%	35V
C077	1-162-971-11	CERAMIC CHIP 0.001uF		50V

Ref. No.	Part No.	Description		Remarks
C078	1-126-400-11	ELECT 22uF	20%	35V
C090	1-126-400-11	ELECT 22uF	20%	35V
C091	1-126-400-11	ELECT 22uF	20%	35V
C507	1-126-204-11	ELECT CHIP 47uF	20%	16V
C508	1-126-204-11	ELECT CHIP 47uF	20%	16V
C523	1-126-204-11	ELECT CHIP 47uF	20%	16V
C524	1-126-204-11	ELECT CHIP 47uF	20%	16V
C528	1-126-204-11	ELECT CHIP 47uF	20%	16V
C529	1-126-204-11	ELECT CHIP 47uF	20%	16V
C533	1-126-204-11	ELECT CHIP 47uF	20%	16V
C534	1-126-204-11	ELECT CHIP 47uF	20%	16V
C535	1-126-400-11	ELECT 22uF	20%	35V
C541	1-126-400-11	ELECT 22uF	20%	35V
C542	1-126-400-11	ELECT 22uF	20%	35V
C543	1-126-400-11	ELECT 22uF	20%	35V
C547	1-126-400-11	ELECT 22uF	20%	35V
C551	1-126-204-11	ELECT CHIP 47uF	20%	16V
C552	1-126-204-11	ELECT CHIP 47uF	20%	16V
C553	1-126-400-11	ELECT 22uF	20%	35V
C554	1-126-400-11	ELECT 22uF	20%	35V
C555	1-126-204-11	ELECT CHIP 47uF	20%	16V
C557	1-126-400-11	ELECT 22uF	20%	35V
C558	1-126-400-11	ELECT 22uF	20%	35V
C559	1-126-204-11	ELECT CHIP 47uF	20%	16V
C560	1-126-602-11	ELECT CHIP 3.3uF	20%	50V
C562	1-126-204-11	ELECT CHIP 47uF	20%	16V
C571	1-126-204-11	ELECT CHIP 47uF	20%	16V
C572	1-126-204-11	ELECT CHIP 47uF	20%	16V
C573	1-126-400-11	ELECT 22uF	20%	35V
C574	1-164-361-11	CERAMIC CHIP 0.047uF		16V
C581	1-126-204-11	ELECT CHIP 47uF	20%	16V
C582	1-126-204-11	ELECT CHIP 47uF	20%	16V
C605	1-126-204-11	ELECT CHIP 47uF	20%	16V
C606	1-126-204-11	ELECT CHIP 47uF	20%	16V
C621	1-126-204-11	ELECT CHIP 47uF	20%	16V

AM-32

Ref. No.	Part No.	Description			Remarks
C622	1-126-204-11	ELECT CHIP	47uF	20%	16V
C626	1-126-204-11	ELECT CHIP	47uF	20%	16V
C627	1-126-204-11	ELECT CHIP	47uF	20%	16V
C635	1-126-400-11	ELECT	22uF	20%	35V
C641	1-126-400-11	ELECT	22uF	20%	35V
C642	1-126-400-11	ELECT	22uF	20%	35V
C643	1-126-400-11	ELECT	22uF	20%	35V
C647	1-126-400-11	ELECT	22uF	20%	35V
C653	1-126-400-11	ELECT	22uF	20%	35V
C654	1-126-400-11	ELECT	22uF	20%	35V
C656	1-126-204-11	ELECT CHIP	47uF	20%	16V
C657	1-126-400-11	ELECT	22uF	20%	35V
C658	1-126-400-11	ELECT	22uF	20%	35V
C660	1-126-602-11	ELECT CHIP	3.3uF	20%	50V
C662	1-126-204-11	ELECT CHIP	47uF	20%	16V
C673	1-126-400-11	ELECT	22uF	20%	35V
C674	1-164-361-11	CERAMIC CHIP	0.047uF		16V

< CONNECTOR >

CN001	1-568-207-11	CONNECTOR, FPC (ZIF) 23P	
CN002	1-566-543-31	CONNECTOR, FPC (NON ZIF) 11P	
CN003	1-566-542-31	CONNECTOR, FPC (NON ZIF) 10P	
CN004	1-566-532-11	CONNECTOR, FPC (ZIF) 16P	
CN005	1-506-487-11	PIN, CONNECTOR 8P	
CN006	1-506-483-21	PIN, CONNECTOR 4P	
* CN007	1-568-783-11	PIN, CONNECTOR 6P	

< DIODE >

D031	8-719-200-27	DIODE	E10DS2
D032	8-719-200-27	DIODE	E10DS2
D501	8-719-800-76	DIODE	1SS226
D502	8-719-800-76	DIODE	1SS226
D503	8-719-800-76	DIODE	1SS226
D504	8-719-800-76	DIODE	1SS226
D505	8-719-800-76	DIODE	1SS226
D601	8-719-800-76	DIODE	1SS226
D602	8-719-800-76	DIODE	1SS226
D603	8-719-800-76	DIODE	1SS226

< IC >

IC001	8-759-100-96	IC	uPC4558G2 (INV)
IC002	8-759-708-08	IC	NJM78L08A (+8V REG)
IC003	8-759-700-67	IC	NJM79L08A (-8V REG)
IC004	8-759-100-96	IC	uPC4558G2 (BUFFER)
IC005	8-759-100-96	IC	uPC4558G2 (AMP)
IC051	8-759-981-86	IC	RC4556MA (AMP)
IC061	8-759-981-86	IC	RC4556MA (AMP)
IC071	8-759-603-27	IC	M5201FP (AUX/MIC SELECT)
IC072	8-759-603-27	IC	M5201FP (AUX/MIC SELECT)
IC505	8-759-100-96	IC	uPC4558G2 (BUFFER)
IC506	8-759-100-96	IC	uPC4558G2 (BUFFER)
IC507	8-759-100-96	IC	uPC4558G2 (AMP)
IC509	8-759-100-96	IC	uPC4558G2 (AMP)
IC510	8-759-932-64	IC	BU4052BCF (INPUT SELECT)
IC511	8-759-932-64	IC	BU4052BCF (INPUT SELECT)
IC512	8-759-635-26	IC	M5283P (EVR)
IC513	8-759-635-26	IC	M5283P (EVR)
IC515	8-759-100-96	IC	uPC4558G2 (MIC AMP)
IC516	8-759-603-27	IC	M5201FP (REC/PGM SELECT)
IC518	8-759-932-64	IC	BU4052BCF (MONITOR OUTPUT SELECT)
IC519	8-759-100-96	IC	uPC4558G2 (BUFFER)
IC520	8-759-100-96	IC	uPC4558G2 (INV AMP)
IC603	8-759-100-96	IC	uPC4558G2 (BUFFER)
IC605	8-759-100-96	IC	uPC4558G2 (BUFFER)
IC606	8-759-100-96	IC	uPC4558G2 (BUFFER)
IC616	8-759-603-27	IC	M5201FP (REC/PGM SELECT)
IC620	8-759-100-96	IC	uPC4558G2 (INV AMP)

< COIL >

L001	1-410-671-31	INDUCTOR 47uH
L002	1-410-671-31	INDUCTOR 47uH
L003	1-410-671-31	INDUCTOR 47uH

< TRANSISTOR >

Q001	8-729-900-53	TRANSISTOR	DTC114EK
Q002	8-729-900-53	TRANSISTOR	DTC114EK
Q003	8-729-900-53	TRANSISTOR	DTC114EK
Q004	8-729-900-53	TRANSISTOR	DTC114EK
Q005	8-729-900-53	TRANSISTOR	DTC114EK
Q006	8-729-900-53	TRANSISTOR	DTC114EK
Q007	8-729-900-53	TRANSISTOR	DTC114EK
Q031	8-729-101-07	TRANSISTOR	2SB798-DL
Q051	8-729-202-38	TRANSISTOR	2SC3326N-A
Q052	8-729-202-38	TRANSISTOR	2SC3326N-A
Q061	8-729-202-38	TRANSISTOR	2SC3326N-A
Q062	8-729-202-38	TRANSISTOR	2SC3326N-A
Q071	8-729-901-04	TRANSISTOR	DTA114EK
Q072	8-729-901-06	TRANSISTOR	DTA144EK

< RESISTOR >

R001	1-216-833-11	METAL CHIP	10K	5%	1/16W
R002	1-216-834-11	METAL CHIP	12K	5%	1/16W
R003	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R004	1-216-833-11	METAL CHIP	10K	5%	1/16W
R005	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R011	1-216-833-11	METAL CHIP	10K	5%	1/16W
R012	1-216-834-11	METAL CHIP	12K	5%	1/16W
R013	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R021	1-216-845-11	METAL CHIP	100K	5%	1/16W
R022	1-216-845-11	METAL CHIP	100K	5%	1/16W

Ref. No.	Part No.	Description			Remarks
R023	1-216-845-11	METAL CHIP	100K	5%	1/16W
R024	1-216-845-11	METAL CHIP	100K	5%	1/16W
R025	1-216-845-11	METAL CHIP	100K	5%	1/16W
R026	1-216-845-11	METAL CHIP	100K	5%	1/16W
R027	1-216-841-11	METAL CHIP	47K	5%	1/16W
R031	1-216-841-11	METAL CHIP	47K	5%	1/16W
R032	1-216-833-11	METAL CHIP	10K	5%	1/16W
R033	1-216-833-11	METAL CHIP	10K	5%	1/16W
R052	1-216-849-11	METAL CHIP	220K	5%	1/16W
R053	1-216-833-11	METAL CHIP	10K	5%	1/16W
R054	1-216-043-00	METAL CHIP	560	5%	1/10W
R055	1-216-833-11	METAL CHIP	10K	5%	1/16W
R056	1-216-043-00	METAL CHIP	560	5%	1/10W
R057	1-216-833-11	METAL CHIP	10K	5%	1/16W
R058	1-216-845-11	METAL CHIP	100K	5%	1/16W
R061	1-216-071-00	METAL CHIP	8.2K	5%	1/10W
R062	1-216-849-11	METAL CHIP	220K	5%	1/16W
R063	1-216-833-11	METAL CHIP	10K	5%	1/16W
R064	1-216-043-00	METAL CHIP	560	5%	1/10W
R065	1-216-833-11	METAL CHIP	10K	5%	1/16W
R066	1-216-043-00	METAL CHIP	560	5%	1/10W
R067	1-216-833-11	METAL CHIP	10K	5%	1/16W
R068	1-216-845-11	METAL CHIP	100K	5%	1/16W
R070	1-216-828-11	METAL CHIP	3.9K	5%	1/16W
R071	1-216-841-11	METAL CHIP	47K	5%	1/16W
R072	1-216-841-11	METAL CHIP	47K	5%	1/16W
R073	1-216-841-11	METAL CHIP	47K	5%	1/16W
R074	1-216-841-11	METAL CHIP	47K	5%	1/16W
R075	1-216-849-11	METAL CHIP	220K	5%	1/16W
R076	1-216-845-11	METAL CHIP	100K	5%	1/16W
R077	1-216-071-00	METAL CHIP	8.2K	5%	1/10W
R078	1-216-836-11	METAL CHIP	18K	5%	1/16W
R079	1-216-824-11	METAL CHIP	1.8K	5%	1/16W
R080	1-216-864-11	METAL CHIP	0	5%	1/16W
R081	1-216-849-11	METAL CHIP	220K	5%	1/16W
R082	1-216-833-11	METAL CHIP	10K	5%	1/16W
R083	1-216-828-11	METAL CHIP	3.9K	5%	1/16W
R084	1-216-836-11	METAL CHIP	18K	5%	1/16W
R085	1-216-824-11	METAL CHIP	1.8K	5%	1/16W
R086	1-216-841-11	METAL CHIP	47K	5%	1/16W
R087	1-216-071-00	METAL CHIP	8.2K	5%	1/10W
R090	1-216-833-11	METAL CHIP	10K	5%	1/16W
R093	1-216-045-00	METAL CHIP	680	5%	1/10W
R094	1-216-045-00	METAL CHIP	680	5%	1/10W
R095	1-216-045-00	METAL CHIP	680	5%	1/10W
R096	1-216-045-00	METAL CHIP	680	5%	1/10W
R502	1-216-821-11	METAL CHIP	1K	5%	1/16W
R503	1-218-272-11	METAL GLAZE	5.1K	5%	1/16W
R506	1-216-821-11	METAL CHIP	1K	5%	1/16W
R507	1-218-272-11	METAL GLAZE	5.1K	5%	1/16W

Ref. No.	Part No.	Description			Remarks
R512	1-216-821-11	METAL CHIP	1K	5%	1/16W
R513	1-218-272-11	METAL GLAZE	5.1K	5%	1/16W
R516	1-216-821-11	METAL CHIP	1K	5%	1/16W
R517	1-218-272-11	METAL GLAZE	5.1K	5%	1/16W
R522	1-216-821-11	METAL CHIP	1K	5%	1/16W
R523	1-218-272-11	METAL GLAZE	5.1K	5%	1/16W
R525	1-216-849-11	METAL CHIP	220K	5%	1/16W
R526	1-216-821-11	METAL CHIP	1K	5%	1/16W
R527	1-218-272-11	METAL GLAZE	5.1K	5%	1/16W
R528	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R529	1-216-833-11	METAL CHIP	10K	5%	1/16W
R531	1-216-814-11	METAL CHIP	270	5%	1/16W
R532	1-216-814-11	METAL CHIP	270	5%	1/16W
R533	1-216-814-11	METAL CHIP	270	5%	1/16W
R534	1-216-814-11	METAL CHIP	270	5%	1/16W
R535	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R536	1-216-833-11	METAL CHIP	10K	5%	1/16W
R550	1-216-849-11	METAL CHIP	220K	5%	1/16W
R551	1-216-833-11	METAL CHIP	10K	5%	1/16W
R552	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R553	1-216-839-11	METAL CHIP	33K	5%	1/16W
R554	1-216-833-11	METAL CHIP	10K	5%	1/16W
R555	1-216-833-11	METAL CHIP	10K	5%	1/16W
R556	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R557	1-216-839-11	METAL CHIP	33K	5%	1/16W
R558	1-216-833-11	METAL CHIP	10K	5%	1/16W
R559	1-216-849-11	METAL CHIP	220K	5%	1/16W
R561	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R562	1-216-833-11	METAL CHIP	10K	5%	1/16W
R564	1-216-833-11	METAL CHIP	10K	5%	1/16W
R566	1-216-833-11	METAL CHIP	10K	5%	1/16W
R567	1-216-849-11	METAL CHIP	220K	5%	1/16W
R569	1-216-864-11	METAL CHIP	0	5%	1/16W
R570	1-216-864-11	METAL CHIP	0	5%	1/16W
R571	1-216-849-11	METAL CHIP	220K	5%	1/16W
R572	1-216-849-11	METAL CHIP	220K	5%	1/16W
R573	1-216-849-11	METAL CHIP	220K	5%	1/16W
R574	1-216-849-11	METAL CHIP	220K	5%	1/16W
R575	1-216-833-11	METAL CHIP	10K	5%	1/16W
R576	1-216-833-11	METAL CHIP	10K	5%	1/16W
R577	1-216-833-11	METAL CHIP	10K	5%	1/16W
R581	1-216-849-11	METAL CHIP	220K	5%	1/16W
R583	1-216-833-11	METAL CHIP	10K	5%	1/16W
R584	1-216-849-11	METAL CHIP	220K	5%	1/16W
R585	1-216-833-11	METAL CHIP	10K	5%	1/16W
R586	1-216-833-11	METAL CHIP	10K	5%	1/16W
R593	1-216-864-11	METAL CHIP	0	5%	1/16W
R594	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R595	1-216-833-11	METAL CHIP	10K	5%	1/16W
R602	1-216-821-11	METAL CHIP	1K	5%	1/16W

Ref. No.	Part No.	Description			Remarks
R603	1-218-272-11	METAL GLAZE	5.1K	5%	1/16W
R606	1-216-821-11	METAL CHIP	1K	5%	1/16W
R607	1-218-272-11	METAL GLAZE	5.1K	5%	1/16W
R612	1-216-821-11	METAL CHIP	1K	5%	1/16W
R613	1-218-272-11	METAL GLAZE	5.1K	5%	1/16W
R616	1-216-821-11	METAL CHIP	1K	5%	1/16W
R617	1-218-272-11	METAL GLAZE	5.1K	5%	1/16W
R622	1-216-821-11	METAL CHIP	1K	5%	1/16W
R623	1-218-272-11	METAL GLAZE	5.1K	5%	1/16W
R625	1-216-849-11	METAL CHIP	220K	5%	1/16W
R626	1-216-821-11	METAL CHIP	1K	5%	1/16W
R627	1-218-272-11	METAL GLAZE	5.1K	5%	1/16W
R628	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R629	1-216-833-11	METAL CHIP	10K	5%	1/16W
R631	1-216-814-11	METAL CHIP	270	5%	1/16W
R632	1-216-814-11	METAL CHIP	270	5%	1/16W
R633	1-216-814-11	METAL CHIP	270	5%	1/16W
R634	1-216-814-11	METAL CHIP	270	5%	1/16W
R635	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R636	1-216-833-11	METAL CHIP	10K	5%	1/16W
R650	1-216-849-11	METAL CHIP	220K	5%	1/16W
R651	1-216-833-11	METAL CHIP	10K	5%	1/16W
R652	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R653	1-216-839-11	METAL CHIP	33K	5%	1/16W
R654	1-216-833-11	METAL CHIP	10K	5%	1/16W
R655	1-216-833-11	METAL CHIP	10K	5%	1/16W
R656	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R657	1-216-839-11	METAL CHIP	33K	5%	1/16W
R658	1-216-833-11	METAL CHIP	10K	5%	1/16W
R659	1-216-849-11	METAL CHIP	220K	5%	1/16W
R661	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R662	1-216-833-11	METAL CHIP	10K	5%	1/16W
R664	1-216-833-11	METAL CHIP	10K	5%	1/16W
R666	1-216-833-11	METAL CHIP	10K	5%	1/16W
R667	1-216-849-11	METAL CHIP	220K	5%	1/16W
R669	1-216-864-11	METAL CHIP	0	5%	1/16W
R670	1-216-864-11	METAL CHIP	0	5%	1/16W
R671	1-216-849-11	METAL CHIP	220K	5%	1/16W
R672	1-216-849-11	METAL CHIP	220K	5%	1/16W
R673	1-216-849-11	METAL CHIP	220K	5%	1/16W
R674	1-216-849-11	METAL CHIP	220K	5%	1/16W
R675	1-216-833-11	METAL CHIP	10K	5%	1/16W
R676	1-216-833-11	METAL CHIP	10K	5%	1/16W
R677	1-216-833-11	METAL CHIP	10K	5%	1/16W
R681	1-216-849-11	METAL CHIP	220K	5%	1/16W
R683	1-216-833-11	METAL CHIP	10K	5%	1/16W
R684	1-216-849-11	METAL CHIP	220K	5%	1/16W
R685	1-216-833-11	METAL CHIP	10K	5%	1/16W
R686	1-216-833-11	METAL CHIP	10K	5%	1/16W
R693	1-216-864-11	METAL CHIP	0	5%	1/16W
R694	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R695	1-216-833-11	METAL CHIP	10K	5%	1/16W

Ref. No.	Part No.	Description	Remarks
		< VARIABLE RESISTOR >	
RV001	1-223-530-11	RES, VAR, CARBON 20K/20K(MAIN P1)	
RV002	1-223-530-11	RES, VAR, CARBON 20K/20K(SUB P1)	
RV003	1-223-530-11	RES, VAR, CARBON 20K/20K(MAIN P2)	
RV004	1-223-530-11	RES, VAR, CARBON 20K/20K(SUB P2)	
RV005	1-223-530-11	RES, VAR, CARBON 20K/20K(AUX 1)	
RV006	1-223-530-11	RES, VAR, CARBON 20K/20K(MONI OUT)	
		< SWITCH >	
S001	1-570-865-11	SWITCH, SLIDE(AUDIO INPUT LEVEL)	
**********			
	A-7063-833-A	AS-46 BOARD, COMPLETE	
		**********	
			(Ref. No. 1,000 Seriese)
	1-751-562-11	CABLE, FLAT (FAR-1)	
*	3-957-048-01	COVER, SLIDE KNOB	
*	3-957-061-01	BASE, SLIDE KNOB	
		< CONNECTOR >	
CN901	1-566-527-11	CONNECTOR, FPC (ZIF) 11P	
		< VARIABLE RESISTOR >	
RV901	1-241-313-11	RES, VAR, SLIDE 10K/10K (AUX 2/MIC)	
RV902	1-241-313-11	RES, VAR, SLIDE 10K/10K (MASTER)	
**********			
*	A-7066-119-A	CP-64 (P) BOARD, COMPLETE	
		**********	
			(Ref. No. 2,000 Seriese)
*	1-526-662-21	SOCKET, IC (DP) 40P	
		< CAPACITOR >	
C500	1-126-193-11	ELECT 1uF 20% 50V	
C501	1-124-778-00	ELECT CHIP 22uF 20% 6.3V	
C502	1-162-917-11	CERAMIC CHIP 15PF 5% 50V	
C503	1-162-917-11	CERAMIC CHIP 15PF 5% 50V	
C504	1-162-926-11	CERAMIC CHIP 82PF 5% 50V	
C505	1-164-360-11	CERAMIC CHIP 0.1uF 16V	
C506	1-164-360-11	CERAMIC CHIP 0.1uF 16V	
C507	1-164-360-11	CERAMIC CHIP 0.1uF 16V	
C508	1-162-917-11	CERAMIC CHIP 15PF 5% 50V	
C509	1-164-360-11	CERAMIC CHIP 0.1uF 16V	
C510	1-162-917-11	CERAMIC CHIP 15PF 5% 50V	
C511	1-164-360-11	CERAMIC CHIP 0.1uF 16V	
C512	1-164-360-11	CERAMIC CHIP 0.1uF 16V	
C515	1-164-360-11	CERAMIC CHIP 0.1uF 16V	
C516	1-164-360-11	CERAMIC CHIP 0.1uF 16V	

Ref. No.	Part No.	Description		Remarks
C517	1-164-360-11	CERAMIC CHIP 0.1uF		16V
C518	1-164-360-11	CERAMIC CHIP 0.1uF		16V
C519	1-126-205-11	ELECT CHIP 47uF	20%	6.3V
C520	1-126-205-11	ELECT CHIP 47uF	20%	6.3V
C521	1-164-360-11	CERAMIC CHIP 0.1uF		16V
C522	1-125-445-11	CAP, DOUBLE LAYERS 0.22F		
C523	1-164-360-11	CERAMIC CHIP 0.1uF		16V
C524	1-164-360-11	CERAMIC CHIP 0.1uF		16V
C525	1-164-360-11	CERAMIC CHIP 0.1uF		16V
C526	1-164-360-11	CERAMIC CHIP 0.1uF		16V
C527	1-164-360-11	CERAMIC CHIP 0.1uF		16V
C528	1-164-360-11	CERAMIC CHIP 0.1uF		16V
C529	1-164-360-11	CERAMIC CHIP 0.1uF		16V
C530	1-164-360-11	CERAMIC CHIP 0.1uF		16V
C531	1-164-360-11	CERAMIC CHIP 0.1uF		16V
C532	1-164-360-11	CERAMIC CHIP 0.1uF		16V
C533	1-164-360-11	CERAMIC CHIP 0.1uF		16V
C534	1-162-917-11	CERAMIC CHIP 15PF	5%	50V
C535	1-162-917-11	CERAMIC CHIP 15PF	5%	50V
C536	1-164-360-11	CERAMIC CHIP 0.1uF		16V
C537	1-164-360-11	CERAMIC CHIP 0.1uF		16V
C538	1-164-360-11	CERAMIC CHIP 0.1uF		16V
C600	1-164-360-11	CERAMIC CHIP 0.1uF		16V
C601	1-164-360-11	CERAMIC CHIP 0.1uF		16V
C602	1-164-360-11	CERAMIC CHIP 0.1uF		16V
		< CONNECTOR >		
CN500	1-569-030-11	CONNECTOR, FPC (ZIF) 21P		
CN501	1-506-485-11	PIN, CONNECTOR 6P		
* CN502	1-569-035-11	CONNECTOR, FPC (ZIF) 30P		
CN503	1-580-722-11	CONNECTOR, BOARD TO BOARD 28P		
CN504	1-580-722-11	CONNECTOR, BOARD TO BOARD 28P		
* CN600	1-569-035-11	CONNECTOR, FPC (ZIF) 30P		
		< DIODE >		
D500	8-719-800-76	DIODE 1SS226		
D501	8-719-105-52	DIODE RD3.6M-B2		
D502	8-719-980-78	DIODE ERA83-006		
D503	8-719-104-34	DIODE 1S2836		
		< FERRITE BEAD >		
FB500	1-412-390-21	INDUCTOR CHIP 0uH		
FB501	1-412-390-21	INDUCTOR CHIP 0uH		
FB502	1-412-390-21	INDUCTOR CHIP 0uH		
FB503	1-412-390-21	INDUCTOR CHIP 0uH		
FB504	1-412-390-21	INDUCTOR CHIP 0uH		
FB505	1-412-390-21	INDUCTOR CHIP 0uH		
FB506	1-412-390-21	INDUCTOR CHIP 0uH		
FB507	1-412-390-21	INDUCTOR CHIP 0uH		
FB508	1-412-390-21	INDUCTOR CHIP 0uH		
FB509	1-412-390-21	INDUCTOR CHIP 0uH		
FB510	1-412-390-21	INDUCTOR CHIP 0uH		
FB511	1-412-390-21	INDUCTOR CHIP 0uH		
FB512	1-412-390-21	INDUCTOR CHIP 0uH		
FB513	1-412-390-21	INDUCTOR CHIP 0uH		
FB514	1-412-390-21	INDUCTOR CHIP 0uH		
FB515	1-412-390-21	INDUCTOR CHIP 0uH		
FB516	1-412-390-21	INDUCTOR CHIP 0uH		
FB517	1-412-390-21	INDUCTOR CHIP 0uH		
FB518	1-412-390-21	INDUCTOR CHIP 0uH		
FB519	1-412-390-21	INDUCTOR CHIP 0uH		
FB520	1-412-390-21	INDUCTOR CHIP 0uH		
FB521	1-412-390-21	INDUCTOR CHIP 0uH		
FB522	1-412-390-21	INDUCTOR CHIP 0uH		
FB523	1-412-390-21	INDUCTOR CHIP 0uH		
FB524	1-412-390-21	INDUCTOR CHIP 0uH		
FB525	1-412-390-21	INDUCTOR CHIP 0uH		
FB526	1-412-390-21	INDUCTOR CHIP 0uH		
FB527	1-412-390-21	INDUCTOR CHIP 0uH		
FB528	1-412-390-21	INDUCTOR CHIP 0uH		
FB529	1-412-390-21	INDUCTOR CHIP 0uH		
FB530	1-412-390-21	INDUCTOR CHIP 0uH		
FB531	1-412-390-21	INDUCTOR CHIP 0uH		
FB532	1-412-390-21	INDUCTOR CHIP 0uH		
FB533	1-412-390-21	INDUCTOR CHIP 0uH		
FB534	1-412-390-21	INDUCTOR CHIP 0uH		
FB535	1-412-390-21	INDUCTOR CHIP 0uH		
FB536	1-412-390-21	INDUCTOR CHIP 0uH		
FB537	1-412-390-21	INDUCTOR CHIP 0uH		
FB538	1-412-390-21	INDUCTOR CHIP 0uH		
FB539	1-412-390-21	INDUCTOR CHIP 0uH		
FB540	1-412-390-21	INDUCTOR CHIP 0uH		
FB541	1-412-390-21	INDUCTOR CHIP 0uH		
FB543	1-412-390-21	INDUCTOR CHIP 0uH		
FB544	1-412-390-21	INDUCTOR CHIP 0uH		
FB545	1-412-390-21	INDUCTOR CHIP 0uH		
FB546	1-412-390-21	INDUCTOR CHIP 0uH		
FB547	1-412-390-21	INDUCTOR CHIP 0uH		
FB548	1-412-390-21	INDUCTOR CHIP 0uH		
FB549	1-412-390-21	INDUCTOR CHIP 0uH		
FB550	1-412-390-21	INDUCTOR CHIP 0uH		
FB551	1-412-390-21	INDUCTOR CHIP 0uH		
FB552	1-412-390-21	INDUCTOR CHIP 0uH		
FB553	1-412-390-21	INDUCTOR CHIP 0uH		
FB554	1-412-390-21	INDUCTOR CHIP 0uH		
FB555	1-412-390-21	INDUCTOR CHIP 0uH		
FB556	1-412-390-21	INDUCTOR CHIP 0uH		
FB557	1-412-390-21	INDUCTOR CHIP 0uH		
FB558	1-412-390-21	INDUCTOR CHIP 0uH		
FB559	1-412-390-21	INDUCTOR CHIP 0uH		
FB560	1-412-390-21	INDUCTOR CHIP 0uH		

CP-64

Ref. No.	Part No.	Description	Remarks
FB561	1-412-390-21	INDUCTOR CHIP 0uH	
FB562	1-412-390-21	INDUCTOR CHIP 0uH	
FB563	1-412-390-21	INDUCTOR CHIP 0uH	
FB564	1-412-390-21	INDUCTOR CHIP 0uH	
FB565	1-412-390-21	INDUCTOR CHIP 0uH	
FB566	1-412-390-21	INDUCTOR CHIP 0uH	
FB567	1-412-390-21	INDUCTOR CHIP 0uH	
FB568	1-412-390-21	INDUCTOR CHIP 0uH	
		< IC >	
IC500	8-759-048-29	IC M37732S4AFP (MASTER MICOM)	
IC501	8-752-855-96	IC CXP80116-895Q (OSD MICOM)	
IC502	8-759-937-56	IC S-8054ALB-LM-S (RESET)	
IC503	8-759-925-80	IC SN74HC14ANS (SCHMITT INV)	
IC504	8-759-185-95	IC TC74VHC245F(EL)(BUS TRASCEIVER)	
IC505	8-759-011-65	IC MC74HC4053F (DATA SELECT)	
IC506	8-759-159-70	IC BR9021BF (EEPROM)	
IC507	8-759-185-95	IC TC74VHC245F(EL)(BAS TRANSCEIVER)	
IC508	8-759-186-32	IC TC74VHC21F (AND GATE)	
IC509	8-759-176-24	IC M66800FP (MEMORY EXPANDER)	
IC510	8-759-277-73	IC M5M27C102P-15-GDX991(ROM)	
IC511	8-759-185-79	IC TC74VHC138F(EL)(CHIP SELECT)	
IC512	8-752-356-60	IC CXK5864CM-10LL (RAM)	
IC513	8-752-356-60	IC CXK5864CM-10LL (RAM)	
IC514	8-759-081-44	IC TC74VHC04F (INV)	
IC515	8-759-244-12	IC TC74AC175F (DELAY)	
IC516	8-759-185-70	IC TC74VHC32F(EL) (OR/GATE)	
IC517	8-759-185-79	IC TC74VHC138F(EL) (ADDRESS DECODER)	
IC518	8-752-327-37	IC CXD1500Q (CPG/PTC/PIU/ICU)	
IC519	8-759-185-95	IC TC74VHC245F(EL) (BUS TANSCEIVER)	
IC520	8-759-185-95	IC TC74VHC245F(EL) (BUS TANSCEIVER)	
IC521	8-759-081-48	IC TC74VHC08F (GATE)	
IC522	8-759-081-48	IC TC74VHC08F (GATE)	
IC523	8-759-081-48	IC TC74VHC08F (GATE)	
IC524	8-759-081-48	IC TC74VHC08F (GATE)	
IC600	8-759-190-79	IC uPD72001GC-11-3B6 (UART)	
IC601	8-759-185-70	IC TC74VHC32F(EL)(UART SELECT)	
IC602	8-759-190-79	IC uPD72001GC-11-3B6 (UART)	
		< COIL >	
L501	1-412-029-11	INDUCTOR CHIP 10uH	
		< TRANSISTOR >	
Q500	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q501	8-729-216-22	TRANSISTOR 2SA1162-G	
Q502	8-729-901-01	TRANSISTOR DTC144EK	

Ref. No.	Part No.	Description			Remarks
		< RESISTOR >			
R500	1-216-854-11	METAL CHIP	560K	5%	1/16W
R501	1-216-864-11	METAL CHIP	0	5%	1/16W
R502	1-216-857-11	METAL CHIP	1M	5%	1/16W
R503	1-216-837-11	METAL CHIP	22K	5%	1/16W
R504	1-216-837-11	METAL CHIP	22K	5%	1/16W
R505	1-216-841-11	METAL CHIP	47K	5%	1/16W
R506	1-216-841-11	METAL CHIP	47K	5%	1/16W
R507	1-216-837-11	METAL CHIP	22K	5%	1/16W
R513	1-216-841-11	METAL CHIP	47K	5%	1/16W
R515	1-216-841-11	METAL CHIP	47K	5%	1/16W
R517	1-216-841-11	METAL CHIP	47K	5%	1/16W
R519	1-216-841-11	METAL CHIP	47K	5%	1/16W
R543	1-216-841-11	METAL CHIP	47K	5%	1/16W
R547	1-216-864-11	METAL CHIP	0	5%	1/16W
R548	1-216-821-11	METAL CHIP	1K	5%	1/16W
R549	1-216-801-11	METAL CHIP	22	5%	1/16W
R551	1-216-864-11	METAL CHIP	0	5%	1/16W
R552	1-216-864-11	METAL CHIP	0	5%	1/16W
R553	1-216-864-11	METAL CHIP	0	5%	1/16W
R554	1-216-837-11	METAL CHIP	22K	5%	1/16W
R555	1-216-816-11	METAL CHIP	390	5%	1/16W
R556	1-216-841-11	METAL CHIP	47K	5%	1/16W
R557	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R558	1-216-837-11	METAL CHIP	22K	5%	1/16W
R559	1-216-806-11	METAL GLAZE	56	5%	1/16W
R562	1-216-833-11	METAL CHIP	10K	5%	1/16W
R563	1-216-837-11	METAL CHIP	22K	5%	1/16W
R569	1-216-841-11	METAL CHIP	47K	5%	1/16W
R570	1-216-841-11	METAL CHIP	47K	5%	1/16W
R584	1-216-837-11	METAL CHIP	22K	5%	1/16W
R585	1-216-841-11	METAL CHIP	47K	5%	1/16W
R586	1-216-841-11	METAL CHIP	47K	5%	1/16W
R587	1-216-841-11	METAL CHIP	47K	5%	1/16W
R588	1-216-841-11	METAL CHIP	47K	5%	1/16W
R589	1-216-841-11	METAL CHIP	47K	5%	1/16W
R590	1-216-841-11	METAL CHIP	47K	5%	1/16W
R591	1-216-837-11	METAL CHIP	22K	5%	1/16W
R592	1-216-841-11	METAL CHIP	47K	5%	1/16W
R593	1-216-841-11	METAL CHIP	47K	5%	1/16W
R594	1-216-841-11	METAL CHIP	47K	5%	1/16W
R595	1-216-841-11	METAL CHIP	47K	5%	1/16W
R596	1-216-837-11	METAL CHIP	22K	5%	1/16W
R597	1-216-837-11	METAL CHIP	22K	5%	1/16W
R598	1-216-837-11	METAL CHIP	22K	5%	1/16W
R600	1-216-837-11	METAL CHIP	22K	5%	1/16W
R601	1-216-837-11	METAL CHIP	22K	5%	1/16W
R602	1-216-837-11	METAL CHIP	22K	5%	1/16W
R603	1-216-837-11	METAL CHIP	22K	5%	1/16W
R604	1-216-841-11	METAL CHIP	47K	5%	1/16W
R625	1-216-841-11	METAL CHIP	47K	5%	1/16W

Ref. No.	Part No.	Description			Remarks
R626	1-216-841-11	METAL CHIP	47K	5%	1/16W
R627	1-216-841-11	METAL CHIP	47K	5%	1/16W
R628	1-216-841-11	METAL CHIP	47K	5%	1/16W
R629	1-216-841-11	METAL CHIP	47K	5%	1/16W
R630	1-216-864-11	METAL CHIP	0	5%	1/16W
R631	1-216-809-11	METAL CHIP	100	5%	1/16W
R632	1-216-809-11	METAL CHIP	100	5%	1/16W
R633	1-216-809-11	METAL CHIP	100	5%	1/16W
R638	1-216-864-11	METAL CHIP	0	5%	1/16W
R640	1-216-864-11	METAL CHIP	0	5%	1/16W
R641	1-216-864-11	METAL CHIP	0	5%	1/16W
R643	1-216-837-11	METAL CHIP	22K	5%	1/16W
R646	1-216-837-11	METAL CHIP	22K	5%	1/16W
R647	1-216-837-11	METAL CHIP	22K	5%	1/16W
R648	1-216-837-11	METAL CHIP	22K	5%	1/16W
R649	1-216-837-11	METAL CHIP	22K	5%	1/16W
R650	1-216-837-11	METAL CHIP	22K	5%	1/16W
R651	1-216-837-11	METAL CHIP	22K	5%	1/16W
R652	1-216-837-11	METAL CHIP	22K	5%	1/16W
R653	1-216-837-11	METAL CHIP	22K	5%	1/16W
R655	1-216-837-11	METAL CHIP	22K	5%	1/16W
R656	1-216-841-11	METAL CHIP	47K	5%	1/16W
R657	1-216-837-11	METAL CHIP	22K	5%	1/16W

< VIBRATOR >

X500	1-579-070-41	VIBRATOR, CRYSTAL 16MHz	
X501	1-579-070-41	VIBRATOR, CRYSTAL 16MHz	
X502	1-577-720-11	VIBRATOR, CRYSTAL 14.7456MHz	

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* A-7063-834-A DP-46 BOARD, COMPLETE

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(Ref. No. 2,000 Seriese)

1-751-563-11 CABLE, FLAT (FDP-1)

< CAPACITOR >

C901	1-163-038-00	CERAMIC CHIP	0.1uF	25V
C902	1-163-038-00	CERAMIC CHIP	0.1uF	25V
C904	1-163-038-00	CERAMIC CHIP	0.1uF	25V
C905	1-163-038-00	CERAMIC CHIP	0.1uF	25V
C906	1-163-038-00	CERAMIC CHIP	0.1uF	25V
C907	1-163-038-00	CERAMIC CHIP	0.1uF	25V
C908	1-163-038-00	CERAMIC CHIP	0.1uF	25V
C909	1-163-038-00	CERAMIC CHIP	0.1uF	25V
C910	1-163-038-00	CERAMIC CHIP	0.1uF	25V
C911	1-163-038-00	CERAMIC CHIP	0.1uF	25V
C912	1-163-038-00	CERAMIC CHIP	0.1uF	25V
C913	1-163-038-00	CERAMIC CHIP	0.1uF	25V
C914	1-163-038-00	CERAMIC CHIP	0.1uF	25V
C915	1-163-038-00	CERAMIC CHIP	0.1uF	25V
C916	1-163-038-00	CERAMIC CHIP	0.1uF	25V
C917	1-163-038-00	CERAMIC CHIP	0.1uF	25V
C918	1-163-038-00	CERAMIC CHIP	0.1uF	25V
C919	1-163-038-00	CERAMIC CHIP	0.1uF	25V
C920	1-163-038-00	CERAMIC CHIP	0.1uF	25V
C921	1-163-038-00	CERAMIC CHIP	0.1uF	25V
C922	1-163-038-00	CERAMIC CHIP	0.1uF	25V
C923	1-163-038-00	CERAMIC CHIP	0.1uF	25V
C924	1-163-038-00	CERAMIC CHIP	0.1uF	25V
C925	1-163-038-00	CERAMIC CHIP	0.1uF	25V
C926	1-163-038-00	CERAMIC CHIP	0.1uF	25V
C927	1-163-038-00	CERAMIC CHIP	0.1uF	25V
C928	1-163-038-00	CERAMIC CHIP	0.1uF	25V
C929	1-163-038-00	CERAMIC CHIP	0.1uF	25V
C930	1-163-038-00	CERAMIC CHIP	0.1uF	25V
C931	1-163-038-00	CERAMIC CHIP	0.1uF	25V
C932	1-163-038-00	CERAMIC CHIP	0.1uF	25V
C933	1-163-038-00	CERAMIC CHIP	0.1uF	25V
C934	1-163-038-00	CERAMIC CHIP	0.1uF	25V
C935	1-163-038-00	CERAMIC CHIP	0.1uF	25V
C936	1-163-038-00	CERAMIC CHIP	0.1uF	25V
C937	1-163-038-00	CERAMIC CHIP	0.1uF	25V
C940	1-163-038-00	CERAMIC CHIP	0.1uF	25V
C951	1-126-206-11	ELECT CHIP	100uF	20% 6.3V
C952	1-126-206-11	ELECT CHIP	100uF	20% 6.3V
C953	1-124-779-00	ELECT CHIP	10uF	20% 16V
C954	1-124-779-00	ELECT CHIP	10uF	20% 16V
C955	1-124-779-00	ELECT CHIP	10uF	20% 16V
C956	1-124-779-00	ELECT CHIP	10uF	20% 16V
C957	1-124-779-00	ELECT CHIP	10uF	20% 16V
C959	1-124-779-00	ELECT CHIP	10uF	20% 16V
C960	1-124-779-00	ELECT CHIP	10uF	20% 16V
C961	1-124-779-00	ELECT CHIP	10uF	20% 16V
C970	1-163-038-00	CERAMIC CHIP	0.1uF	25V
C971	1-163-038-00	CERAMIC CHIP	0.1uF	25V
C972	1-163-038-00	CERAMIC CHIP	0.1uF	25V

< CONNECTOR >

* CN901	1-569-035-11	CONNECTOR, FPC (ZIF) 30P
CN902	1-506-485-11	PIN, CONNECTOR 6P

< DIODE >

D901	8-719-913-53	LED LA-301VL (PLAYER 1 HOURS 8)
D902	8-719-913-53	LED LA-301VL (PLAYER 1 HOURS 8)
D903	8-719-913-53	LED LA-301VL (PLAYER 1 HOURS 8)
D904	8-719-913-53	LED LA-301VL (PLAYER 1 HOURS 8)
D905	8-719-913-53	LED LA-301VL (PLAYER 1 HOURS 8)
D906	8-719-913-53	LED LA-301VL (PLAYER 1 HOURS 8)
D907	8-719-913-53	LED LA-301VL (PLAYER 1 HOURS 8)
D908	8-719-913-53	LED LA-301VL (PLAYER 1 HOURS 8)
D909	8-719-913-53	LED LA-301VL (PLAYER 1 HOURS 8)
D910	8-719-913-53	LED LA-301VL (PLAYER 1 HOURS 8)

Ref. No.	Part No.	Description	Remarks
D911	8-719-913-53	LED LA-301VL (PLAYER 1 HOURS 8)	
D912	8-719-913-53	LED LA-301VL (PLAYER 1 HOURS 8)	
D913	8-719-913-53	LED LA-301VL (PLAYER 1 HOURS 8)	
D914	8-719-913-53	LED LA-301VL (PLAYER 1 HOURS 8)	
D915	8-719-913-53	LED LA-301VL (PLAYER 1 HOURS 8)	
D916	8-719-913-53	LED LA-301VL (PLAYER 1 HOURS 8)	
D917	8-719-913-53	LED LA-301VL (PLAYER 1 HOURS 8)	
D918	8-719-913-53	LED LA-301VL (PLAYER 1 HOURS 8)	
D919	8-719-913-53	LED LA-301VL (PLAYER 1 HOURS 8)	
D920	8-719-913-53	LED LA-301VL (PLAYER 1 HOURS 8)	
D921	8-719-913-53	LED LA-301VL (PLAYER 1 HOURS 8)	
D922	8-719-913-53	LED LA-301VL (PLAYER 1 HOURS 8)	
D923	8-719-913-53	LED LA-301VL (PLAYER 1 HOURS 8)	
D924	8-719-913-53	LED LA-301VL (PLAYER 1 HOURS 8)	
D925	8-719-913-53	LED LA-301VL (EDIT PGM 8)	
D926	8-719-913-53	LED LA-301VL (EDIT PGM 8)	
D927	8-719-913-53	LED LA-301VL (EDIT PGM 8)	
D931	8-719-104-34	DIODE 1S2836	
D932	8-719-104-34	DIODE 1S2836	
D933	8-719-104-34	DIODE 1S2836	
D934	8-719-104-34	DIODE 1S2836	
D935	8-719-104-34	DIODE 1S2836	
D936	8-719-104-34	DIODE 1S2836	
D937	8-719-104-34	DIODE 1S2836	
D938	8-719-104-34	DIODE 1S2836	
D941	8-719-801-78	DIODE 1SS184	
D942	8-719-801-78	DIODE 1SS184	
D943	8-719-801-78	DIODE 1SS184	
D944	8-719-801-78	DIODE 1SS184	
D945	8-719-801-78	DIODE 1SS184	
D946	8-719-801-78	DIODE 1SS184	
D947	8-719-801-78	DIODE 1SS184	
D948	8-719-801-78	DIODE 1SS184	
D949	8-719-801-78	DIODE 1SS184	
D950	8-719-801-78	DIODE 1SS184	
D951	8-719-801-78	DIODE 1SS184	
D952	8-719-801-78	DIODE 1SS184	
D961	8-719-029-43	DIODE CL-140SD-CD-T (RECORDER SERVO)	
D962	8-719-029-43	DIODE CL-140SD-CD-T (SCREEN OFF)	
D963	8-719-029-43	DIODE CL-140SD-CD-T (RECORDER SERVO)	
D964	8-719-029-43	DIODE CL-140SD-CD-T (SCREEN ON)	
D965	8-719-029-43	DIODE CL-140SD-CD-T (SCREEN MENU)	
D966	8-719-029-43	DIODE CL-140SD-CD-T (SCREEN MENU)	
D967	8-719-029-43	DIODE CL-140SD-CD-T (RECORDER IN)	
D968	8-719-029-43	DIODE CL-140SD-CD-T (RECORDER OUT)	
D969	8-719-029-43	DIODE CL-140SD-CD-T (PLAYER 1 SERVO)	
D970	8-719-029-43	DIODE CL-140SD-CD-T (PLAYER 2 SERVO)	
D971	8-719-029-43	DIODE CL-140SD-CD-T (PLAYER 1 SERVO)	
D972	8-719-029-43	DIODE CL-140SD-CD-T (PLAYER 2 SERVO)	
D973	8-719-029-43	DIODE CL-140SD-CD-T (A-BUS P1)	
D974	8-719-029-43	DIODE CL-140SD-CD-T (B-BUS P1)	
D975	8-719-029-43	DIODE CL-140SD-CD-T (A-BUS P2)	
D976	8-719-029-43	DIODE CL-140SD-CD-T (B-BUS P2)	
D977	8-719-029-43	DIODE CL-140SD-CD-T (A-BUS AUX 1)	
D978	8-719-029-43	DIODE CL-140SD-CD-T (B-BUS AUX 1)	
D979	8-719-029-43	DIODE CL-140SD-CD-T (PLAYER 1 IN)	
D980	8-719-029-43	DIODE CL-140SD-CD-T (PLAYER 2 IN)	
D981	8-719-029-43	DIODE CL-140SD-CD-T (PLAYER 1 OUT)	
D982	8-719-029-43	DIODE CL-140SD-CD-T (PLAYER 2 OUT)	
		< FERRITE BEAD >	
FB901	1-543-813-21	FILTER, EMI	
FB902	1-543-813-21	FILTER, EMI	
FB903	1-543-813-21	FILTER, EMI	
		< IC >	
IC901	8-759-234-67	IC TMP82C79M-2 (KEY/LED CONTROLLER)	
IC902	8-759-234-67	IC TMP82C79M-2 (KEY/LED CONTROLLER)	
IC903	8-759-926-11	IC SN74HC138ANS (ADDRESS DECODER)	
IC904	8-759-926-42	IC SN74HC238ANS (ADDRESS DECODER)	
IC905	8-759-926-42	IC SN74HC238ANS (ADDRESS DECODER)	
IC906	8-759-926-77	IC SN74HC541ANS (BUFFER)	
IC911	8-759-051-53	IC TD62381F (DRIVER)	
IC912	8-759-051-53	IC TD62381F (DRIVER)	
IC913	8-759-051-53	IC TD62381F (DRIVER)	
IC914	8-759-051-53	IC TD62381F (DRIVER)	
IC915	8-759-051-53	IC TD62381F (DRIVER)	
IC916	8-759-926-42	IC SN74HC238ANS (ADDRESS DECODER)	
IC917	8-759-926-42	IC SN74HC238ANS (ADDRESS DECODER)	
		< COIL >	
L901	1-410-381-11	INDUCTOR CHIP 10uH	
		< SWIICT >	
LS901	1-692-518-11	SWITCH, TACTIL (LS22BB-2SD/SD-T) (EDIT NO)	
LS902	1-692-518-11	SWITCH, TACTIL (LS22BB-2SD/SD-T) (SNAP SHOT)	
LS903	1-692-518-11	SWITCH, TACTIL (LS22BB-2SD/SD-T) (STORE)	
LS904	1-692-518-11	SWITCH, TACTIL (LS22BB-2SD/SD-T) (RECALL)	
LS905	1-692-518-11	SWITCH, TACTIL (LS22BB-2SD/SD-T) (PGM MODE)	
LS906	1-692-518-11	SWITCH, TACTIL (LS22BB-2SD/SD-T) (LEARN)	
		< TRANSISTOR >	
Q901	8-729-904-48	TRANSISTOR DTB113EK	
Q902	8-729-904-48	TRANSISTOR DTB113EK	
Q903	8-729-904-48	TRANSISTOR DTB113EK	
Q904	8-729-904-48	TRANSISTOR DTB113EK	
Q905	8-729-904-48	TRANSISTOR DTB113EK	
Q906	8-729-904-48	TRANSISTOR DTB113EK	
Q907	8-729-904-48	TRANSISTOR DTB113EK	
Q908	8-729-904-48	TRANSISTOR DTB113EK	
Q909	8-729-904-48	TRANSISTOR DTB113EK	
Q910	8-729-904-48	TRANSISTOR DTB113EK	

Ref. No.	Part No.	Description				Remarks
Q911	8-729-904-48	TRANSISTOR	DTB113EK			
Q912	8-729-904-48	TRANSISTOR	DTB113EK			
Q913	8-729-904-48	TRANSISTOR	DTB113EK			
Q914	8-729-904-48	TRANSISTOR	DTB113EK			
Q915	8-729-904-48	TRANSISTOR	DTB113EK			
Q916	8-729-904-48	TRANSISTOR	DTB113EK			
Q917	8-729-904-48	TRANSISTOR	DTB113EK			
Q918	8-729-904-48	TRANSISTOR	DTB113EK			
Q919	8-729-904-48	TRANSISTOR	DTB113EK			
Q920	8-729-904-48	TRANSISTOR	DTB113EK			
Q921	8-729-904-48	TRANSISTOR	DTB113EK			
Q922	8-729-904-48	TRANSISTOR	DTB113EK			
Q923	8-729-904-48	TRANSISTOR	DTB113EK			
Q930	8-729-901-06	TRANSISTOR	DTA144EK			
		< RESISTOR >				
R901	1-216-031-00	METAL CHIP	180	5%	1/10W	
R902	1-216-031-00	METAL CHIP	180	5%	1/10W	
R903	1-216-031-00	METAL CHIP	180	5%	1/10W	
R904	1-216-031-00	METAL CHIP	180	5%	1/10W	
R905	1-216-031-00	METAL CHIP	180	5%	1/10W	
R906	1-216-031-00	METAL CHIP	180	5%	1/10W	
R907	1-216-031-00	METAL CHIP	180	5%	1/10W	
R908	1-216-031-00	METAL CHIP	180	5%	1/10W	
R909	1-216-031-00	METAL CHIP	180	5%	1/10W	
R910	1-216-031-00	METAL CHIP	180	5%	1/10W	
R911	1-216-031-00	METAL CHIP	180	5%	1/10W	
R912	1-216-031-00	METAL CHIP	180	5%	1/10W	
R913	1-216-031-00	METAL CHIP	180	5%	1/10W	
R914	1-216-031-00	METAL CHIP	180	5%	1/10W	
R915	1-216-031-00	METAL CHIP	180	5%	1/10W	
R916	1-216-031-00	METAL CHIP	180	5%	1/10W	
R917	1-216-031-00	METAL CHIP	180	5%	1/10W	
R918	1-216-031-00	METAL CHIP	180	5%	1/10W	
R919	1-216-031-00	METAL CHIP	180	5%	1/10W	
R920	1-216-031-00	METAL CHIP	180	5%	1/10W	
R921	1-216-031-00	METAL CHIP	180	5%	1/10W	
R922	1-216-031-00	METAL CHIP	180	5%	1/10W	
R923	1-216-031-00	METAL CHIP	180	5%	1/10W	
R924	1-216-031-00	METAL CHIP	180	5%	1/10W	
R925	1-216-031-00	METAL CHIP	180	5%	1/10W	
R926	1-216-031-00	METAL CHIP	180	5%	1/10W	
R927	1-216-031-00	METAL CHIP	180	5%	1/10W	
R928	1-216-031-00	METAL CHIP	180	5%	1/10W	
R929	1-216-031-00	METAL CHIP	180	5%	1/10W	
R930	1-216-031-00	METAL CHIP	180	5%	1/10W	
R931	1-216-031-00	METAL CHIP	180	5%	1/10W	
R932	1-216-031-00	METAL CHIP	180	5%	1/10W	
R933	1-216-031-00	METAL CHIP	180	5%	1/10W	
R934	1-216-031-00	METAL CHIP	180	5%	1/10W	
R935	1-216-031-00	METAL CHIP	180	5%	1/10W	

Ref. No.	Part No.	Description				Remarks
R936	1-216-031-00	METAL CHIP	180	5%	1/10W	
R937	1-216-031-00	METAL CHIP	180	5%	1/10W	
R938	1-216-031-00	METAL CHIP	180	5%	1/10W	
R939	1-216-031-00	METAL CHIP	180	5%	1/10W	
R940	1-216-031-00	METAL CHIP	180	5%	1/10W	
R941	1-216-031-00	METAL CHIP	180	5%	1/10W	
R942	1-216-031-00	METAL CHIP	180	5%	1/10W	
R943	1-216-031-00	METAL CHIP	180	5%	1/10W	
R944	1-216-031-00	METAL CHIP	180	5%	1/10W	
R945	1-216-031-00	METAL CHIP	180	5%	1/10W	
R946	1-216-031-00	METAL CHIP	180	5%	1/10W	
R947	1-216-031-00	METAL CHIP	180	5%	1/10W	
R948	1-216-031-00	METAL CHIP	180	5%	1/10W	
R949	1-216-031-00	METAL CHIP	180	5%	1/10W	
R950	1-216-031-00	METAL CHIP	180	5%	1/10W	
R951	1-216-031-00	METAL CHIP	180	5%	1/10W	
R952	1-216-031-00	METAL CHIP	180	5%	1/10W	
R953	1-216-031-00	METAL CHIP	180	5%	1/10W	
R954	1-216-031-00	METAL CHIP	180	5%	1/10W	
R955	1-216-031-00	METAL CHIP	180	5%	1/10W	
R956	1-216-031-00	METAL CHIP	180	5%	1/10W	
R957	1-216-031-00	METAL CHIP	180	5%	1/10W	
R958	1-216-031-00	METAL CHIP	180	5%	1/10W	
R959	1-216-031-00	METAL CHIP	180	5%	1/10W	
R960	1-216-031-00	METAL CHIP	180	5%	1/10W	
R961	1-216-031-00	METAL CHIP	180	5%	1/10W	
R962	1-216-031-00	METAL CHIP	180	5%	1/10W	
R963	1-216-031-00	METAL CHIP	180	5%	1/10W	
R964	1-216-031-00	METAL CHIP	180	5%	1/10W	
R965	1-216-031-00	METAL CHIP	180	5%	1/10W	
R966	1-216-031-00	METAL CHIP	180	5%	1/10W	
R967	1-216-031-00	METAL CHIP	180	5%	1/10W	
R968	1-216-031-00	METAL CHIP	180	5%	1/10W	
R969	1-216-031-00	METAL CHIP	180	5%	1/10W	
R970	1-216-031-00	METAL CHIP	180	5%	1/10W	
R971	1-216-031-00	METAL CHIP	180	5%	1/10W	
R972	1-216-031-00	METAL CHIP	180	5%	1/10W	
R973	1-216-031-00	METAL CHIP	180	5%	1/10W	
R974	1-216-031-00	METAL CHIP	180	5%	1/10W	
R975	1-216-031-00	METAL CHIP	180	5%	1/10W	
R976	1-216-089-91	METAL GLAZE	47K	5%	1/10W	
R977	1-216-089-91	METAL GLAZE	47K	5%	1/10W	
R978	1-216-089-91	METAL GLAZE	47K	5%	1/10W	
R979	1-216-089-91	METAL GLAZE	47K	5%	1/10W	
R980	1-216-089-91	METAL GLAZE	47K	5%	1/10W	
R981	1-216-089-91	METAL GLAZE	47K	5%	1/10W	
R982	1-216-089-91	METAL GLAZE	47K	5%	1/10W	
R983	1-216-089-91	METAL GLAZE	47K	5%	1/10W	
R984	1-216-089-91	METAL GLAZE	47K	5%	1/10W	
R985	1-216-089-91	METAL GLAZE	47K	5%	1/10W	

Ref. No.	Part No.	Description			Remarks
R986	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R989	1-216-031-00	METAL CHIP	180	5%	1/10W
R990	1-216-031-00	METAL CHIP	180	5%	1/10W
R991	1-216-031-00	METAL CHIP	180	5%	1/10W
R992	1-216-031-00	METAL CHIP	180	5%	1/10W
R993	1-216-031-00	METAL CHIP	180	5%	1/10W
R994	1-216-031-00	METAL CHIP	180	5%	1/10W
R995	1-216-097-00	METAL CHIP	100K	5%	1/10W
R997	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R998	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R999	1-216-089-91	METAL GLAZE	47K	5%	1/10W
		< SWITCH >			
S901	1-571-787-11	SWITCH, TACTILE (SET)			
S902	1-571-787-11	SWITCH, TACTILE (DATA)			
S903	1-571-787-11	SWITCH, TACTILE (MENU)			
S904	1-571-787-11	SWITCH, TACTILE (SCREEN)			
S905	1-571-787-11	SWITCH, TACTILE (+)			
S906	1-571-787-11	SWITCH, TACTILE (-)			
S907	1-571-787-11	SWITCH, TACTILE (DEL)			
S908	1-571-787-11	SWITCH, TACTILE (DIS/ENA)			
S909	1-571-787-11	SWITCH, TACTILE (A-BUS P1)			
S910	1-571-787-11	SWITCH, TACTILE (A-BUS P2)			
S911	1-571-787-11	SWITCH, TACTILE (A-BUS AUX1)			
S912	1-571-787-11	SWITCH, TACTILE (B-BUS P1)			
S913	1-571-787-11	SWITCH, TACTILE (B-BUS P2)			
S914	1-571-787-11	SWITCH, TACTILE (B-BUS AUX2)			
S915	1-571-787-11	SWITCH, TACTILE (PLAYER 2 RESET)			
S916	1-571-787-11	SWITCH, TACTILE (PLAYER 1 RESET)			
S917	1-571-787-11	SWITCH, TACTILE (RECORDER RESET)			
**********					
*	A-7066-121-A	DV-19 (P) BOARD, COMPLETE			
		**********			
		(Ref. No. 7,000 Seriese)			
	1-751-564-11	CABLE, FLAT (FUP-1)			
	1-751-569-11	CABLE, FLAT (FAC-1)			
*	3-957-074-01	CASE (DV-19) (UPPER), SHIELD			
*	3-957-076-01	CASE (DV-19) (LOWER), SHIELD			
	7-685-646-79	SCREW +BVTP 3X8 TYPE2 IT-3			
		< CAPACITOR >			
C001	1-162-923-11	CERAMIC CHIP	47PF	5%	50V
C002	1-162-923-11	CERAMIC CHIP	47PF	5%	50V
C003	1-162-923-11	CERAMIC CHIP	47PF	5%	50V
C004	1-162-923-11	CERAMIC CHIP	47PF	5%	50V
C005	1-162-923-11	CERAMIC CHIP	47PF	5%	50V
C006	1-162-923-11	CERAMIC CHIP	47PF	5%	50V
C007	1-162-923-11	CERAMIC CHIP	47PF	5%	50V
C008	1-162-923-11	CERAMIC CHIP	47PF	5%	50V
C009	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C010	1-162-923-11	CERAMIC CHIP	47PF	5%	50V

Ref. No.	Part No.	Description			Remarks
C011	1-162-923-11	CERAMIC CHIP	47PF	5%	50V
C012	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C013	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C014	1-162-923-11	CERAMIC CHIP	47PF	5%	50V
C015	1-162-923-11	CERAMIC CHIP	47PF	5%	50V
C016	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C017	1-124-779-00	ELECT CHIP	10uF	20%	16V
C018	1-124-779-00	ELECT CHIP	10uF	20%	16V
C019	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C020	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C021	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C022	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C023	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C024	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C025	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C026	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C027	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C028	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C029	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C030	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C031	1-162-923-11	CERAMIC CHIP	47PF	5%	50V
C032	1-162-923-11	CERAMIC CHIP	47PF	5%	50V
C033	1-162-920-11	CERAMIC CHIP	27PF	5%	50V
C034	1-162-920-11	CERAMIC CHIP	27PF	5%	50V
C035	1-162-923-11	CERAMIC CHIP	47PF	5%	50V
C036	1-162-923-11	CERAMIC CHIP	47PF	5%	50V
C037	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C038	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C039	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C040	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C041	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C042	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C043	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C044	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C045	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C046	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C047	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C048	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C049	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C050	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C051	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C052	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C053	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C054	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C055	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C056	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C057	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C058	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C059	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C061	1-126-206-11	ELECT CHIP	100uF	20%	6.3V

Ref. No.	Part No.	Description			Remarks
C065	1-164-360-11	CERAMIC CHIP	0. 1uF		16V
C066	1-164-360-11	CERAMIC CHIP	0. 1uF		16V
C067	1-126-206-11	ELECT CHIP	100uF	20%	6. 3V
C069	1-126-206-11	ELECT CHIP	100uF	20%	6. 3V
C070	1-162-964-11	CERAMIC CHIP	0. 001uF	10%	50V
C071	1-126-602-11	ELECT CHIP	3. 3uF	20%	50V
C072	1-162-964-11	CERAMIC CHIP	0. 001uF	10%	50V
C073	1-126-602-11	ELECT CHIP	3. 3uF	20%	50V
C101	1-126-204-11	ELECT CHIP	47uF	20%	16V
C102	1-164-360-11	CERAMIC CHIP	0. 1uF		16V
C103	1-164-360-11	CERAMIC CHIP	0. 1uF		16V
C104	1-164-005-11	CERAMIC CHIP	0. 47uF		25V
C105	1-164-005-11	CERAMIC CHIP	0. 47uF		25V
C106	1-164-360-11	CERAMIC CHIP	0. 1uF		16V
C107	1-126-204-11	ELECT CHIP	47uF	20%	16V
C108	1-164-360-11	CERAMIC CHIP	0. 1uF		16V
C109	1-164-360-11	CERAMIC CHIP	0. 1uF		16V
C110	1-164-360-11	CERAMIC CHIP	0. 1uF		16V
C111	1-164-360-11	CERAMIC CHIP	0. 1uF		16V
C112	1-164-360-11	CERAMIC CHIP	0. 1uF		16V
C113	1-162-923-11	CERAMIC CHIP	47PF	5%	50V
C114	1-164-360-11	CERAMIC CHIP	0. 1uF		16V
C115	1-164-360-11	CERAMIC CHIP	0. 1uF		16V
C116	1-162-923-11	CERAMIC CHIP	47PF	5%	50V
C117	1-162-923-11	CERAMIC CHIP	47PF	5%	50V
C118	1-164-360-11	CERAMIC CHIP	0. 1uF		16V
C119	1-162-970-11	CERAMIC CHIP	0. 01uF	10%	25V
C120	1-164-360-11	CERAMIC CHIP	0. 1uF		16V
C121	1-162-970-11	CERAMIC CHIP	0. 01uF	10%	25V
C122	1-164-360-11	CERAMIC CHIP	0. 1uF		16V
C123	1-164-360-11	CERAMIC CHIP	0. 1uF		16V
C125	1-162-970-11	CERAMIC CHIP	0. 01uF	10%	25V
C126	1-164-360-11	CERAMIC CHIP	0. 1uF		16V
C127	1-164-360-11	CERAMIC CHIP	0. 1uF		16V
C128	1-126-204-11	ELECT CHIP	47uF	20%	16V
C129	1-162-970-11	CERAMIC CHIP	0. 01uF	10%	25V
C130	1-162-970-11	CERAMIC CHIP	0. 01uF	10%	25V
C131	1-164-360-11	CERAMIC CHIP	0. 1uF		16V
C132	1-126-204-11	ELECT CHIP	47uF	20%	16V
C133	1-126-204-11	ELECT CHIP	47uF	20%	16V
C134	1-162-970-11	CERAMIC CHIP	0. 01uF	10%	25V
C135	1-164-360-11	CERAMIC CHIP	0. 1uF		16V
C136	1-162-970-11	CERAMIC CHIP	0. 01uF	10%	25V
C137	1-164-185-11	CERAMIC CHIP	13PF	5%	50V
C138	1-126-204-11	ELECT CHIP	47uF	20%	16V
C139	1-162-922-11	CERAMIC CHIP	39PF	5%	50V
C140	1-164-382-11	CERAMIC CHIP	91PF	5%	50V
C141	1-164-360-11	CERAMIC CHIP	0. 1uF		16V
C142	1-164-360-11	CERAMIC CHIP	0. 1uF		16V
C143	1-164-360-11	CERAMIC CHIP	0. 1uF		16V

Ref. No.	Part No.	Description			Remarks
C144	1-126-204-11	ELECT CHIP	47uF	20%	16V
C145	1-126-204-11	ELECT CHIP	47uF	20%	16V
C146	1-126-603-11	ELECT CHIP	4. 7uF	20%	35V
C147	1-164-360-11	CERAMIC CHIP	0. 1uF		16V
C148	1-164-360-11	CERAMIC CHIP	0. 1uF		16V
C149	1-126-204-11	ELECT CHIP	47uF	20%	16V
C150	1-126-204-11	ELECT CHIP	47uF	20%	16V
C151	1-164-360-11	CERAMIC CHIP	0. 1uF		16V
C152	1-164-005-11	CERAMIC CHIP	0. 47uF		25V
C153	1-164-360-11	CERAMIC CHIP	0. 1uF		16V
C154	1-162-915-11	CERAMIC CHIP	10PF	0. 5PF	50V
C155	1-162-915-11	CERAMIC CHIP	10PF	0. 5PF	50V
C156	1-126-204-11	ELECT CHIP	47uF	20%	16V
C157	1-164-360-11	CERAMIC CHIP	0. 1uF		16V
C158	1-164-360-11	CERAMIC CHIP	0. 1uF		16V
C159	1-164-360-11	CERAMIC CHIP	0. 1uF		16V
C160	1-164-360-11	CERAMIC CHIP	0. 1uF		16V
C161	1-164-005-11	CERAMIC CHIP	0. 47uF		25V
C162	1-164-360-11	CERAMIC CHIP	0. 1uF		16V
C163	1-164-005-11	CERAMIC CHIP	0. 47uF		25V
C164	1-164-360-11	CERAMIC CHIP	0. 1uF		16V
C165	1-128-453-21	ELECT CHIP	47uF	20%	6. 3V
C166	1-162-924-11	CERAMIC CHIP	56PF	5%	50V
C201	1-124-779-00	ELECT CHIP	10uF	20%	16V
C202	1-124-779-00	ELECT CHIP	10uF	20%	16V
C203	1-164-360-11	CERAMIC CHIP	0. 1uF		16V
C204	1-164-360-11	CERAMIC CHIP	0. 1uF		16V
C205	1-124-779-00	ELECT CHIP	10uF	20%	16V
C206	1-124-779-00	ELECT CHIP	10uF	20%	16V
C207	1-124-779-00	ELECT CHIP	10uF	20%	16V
C208	1-164-360-11	CERAMIC CHIP	0. 1uF		16V
C209	1-164-360-11	CERAMIC CHIP	0. 1uF		16V
C210	1-124-779-00	ELECT CHIP	10uF	20%	16V
C211	1-164-360-11	CERAMIC CHIP	0. 1uF		16V
C212	1-164-360-11	CERAMIC CHIP	0. 1uF		16V
C213	1-164-360-11	CERAMIC CHIP	0. 1uF		16V
C214	1-164-360-11	CERAMIC CHIP	0. 1uF		16V
C215	1-124-779-00	ELECT CHIP	10uF	20%	16V
C216	1-164-360-11	CERAMIC CHIP	0. 1uF		16V
C217	1-164-360-11	CERAMIC CHIP	0. 1uF		16V
C218	1-162-919-11	CERAMIC CHIP	22PF	5%	50V
C219	1-164-360-11	CERAMIC CHIP	0. 1uF		16V
C220	1-164-360-11	CERAMIC CHIP	0. 1uF		16V
C221	1-162-915-11	CERAMIC CHIP	10PF	0. 5PF	50V
C222	1-162-919-11	CERAMIC CHIP	22PF	5%	50V
C223	1-162-919-11	CERAMIC CHIP	22PF	5%	50V
C224	1-126-204-11	ELECT CHIP	47uF	20%	16V
C225	1-162-928-11	CERAMIC CHIP	120PF	5%	50V
C226	1-162-970-11	CERAMIC CHIP	0. 01uF	10%	25V
C227	1-162-970-11	CERAMIC CHIP	0. 01uF	10%	25V

Ref. No.	Part No.	Description			Remarks
C228	1-162-957-11	CERAMIC CHIP	220PF	5%	50V
C229	1-162-957-11	CERAMIC CHIP	220PF	5%	50V
C230	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C231	1-164-357-11	CERAMIC CHIP	1000PF	5%	50V
C232	1-124-779-00	ELECT CHIP	10uF	20%	16V
C233	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C234	1-164-346-11	CERAMIC CHIP	1uF		16V
C235	1-124-779-00	ELECT CHIP	10uF	20%	16V
C236	1-164-490-11	CERAMIC CHIP	0.068uF		16V
C237	1-164-346-11	CERAMIC CHIP	1uF		16V
C238	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C239	1-124-779-00	ELECT CHIP	10uF	20%	16V
C240	1-124-779-00	ELECT CHIP	10uF	20%	16V
C241	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C242	1-164-357-11	CERAMIC CHIP	1000PF	5%	50V
C243	1-162-953-11	CERAMIC CHIP	100PF	5%	50V
C244	1-164-676-11	CERAMIC CHIP	2200PF	5%	16V
C245	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C246	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C247	1-126-191-11	ELECT	0.47uF	20%	50V
C248	1-124-779-00	ELECT CHIP	10uF	20%	16V
C249	1-164-185-11	CERAMIC CHIP	13PF	5%	50V
C250	1-162-922-11	CERAMIC CHIP	39PF	5%	50V
C251	1-164-382-11	CERAMIC CHIP	91PF	5%	50V
C252	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C253	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C254	1-124-779-00	ELECT CHIP	10uF	20%	16V
C255	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C256	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C257	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C258	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C259	1-164-315-11	CERAMIC CHIP	470PF	5%	50V
C260	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C261	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C262	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C263	1-162-922-11	CERAMIC CHIP	39PF	5%	50V
C264	1-162-920-11	CERAMIC CHIP	27PF	5%	50V
C265	1-162-920-11	CERAMIC CHIP	27PF	5%	50V
C266	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C267	1-124-779-00	ELECT CHIP	10uF	20%	16V
C268	1-124-779-00	ELECT CHIP	10uF	20%	16V
C269	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C270	1-164-238-11	CERAMIC CHIP	36PF	5%	50V
C301	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C302	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C303	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C304	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C305	1-163-137-00	CERAMIC CHIP	680PF	5%	50V
C306	1-124-779-00	ELECT CHIP	10uF	20%	16V
C307	1-164-360-11	CERAMIC CHIP	0.1uF		16V

Ref. No.	Part No.	Description			Remarks
C308	1-126-204-11	ELECT CHIP	47uF	20%	16V
C309	1-162-923-11	CERAMIC CHIP	47PF	5%	50V
C310	1-162-923-11	CERAMIC CHIP	47PF	5%	50V
C311	1-162-923-11	CERAMIC CHIP	47PF	5%	50V
C312	1-162-923-11	CERAMIC CHIP	47PF	5%	50V
C401	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C402	1-124-779-00	ELECT CHIP	10uF	20%	16V
C403	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C404	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C405	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C406	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C407	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C408	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C409	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C410	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C419	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C420	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C421	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C451	1-162-923-11	CERAMIC CHIP	47PF	5%	50V
C452	1-162-923-11	CERAMIC CHIP	47PF	5%	50V
C453	1-162-923-11	CERAMIC CHIP	47PF	5%	50V
C454	1-162-957-11	CERAMIC CHIP	220PF	5%	50V
C455	1-162-957-11	CERAMIC CHIP	220PF	5%	50V
C456	1-162-923-11	CERAMIC CHIP	47PF	5%	50V
C457	1-162-923-11	CERAMIC CHIP	47PF	5%	50V
C458	1-162-923-11	CERAMIC CHIP	47PF	5%	50V
C459	1-162-923-11	CERAMIC CHIP	47PF	5%	50V
C460	1-162-958-11	CERAMIC CHIP	270PF	5%	50V
C461	1-162-923-11	CERAMIC CHIP	47PF	5%	50V
C462	1-162-923-11	CERAMIC CHIP	47PF	5%	50V
C463	1-162-923-11	CERAMIC CHIP	47PF	5%	50V
C464	1-162-923-11	CERAMIC CHIP	47PF	5%	50V
C465	1-162-923-11	CERAMIC CHIP	47PF	5%	50V
C466	1-162-923-11	CERAMIC CHIP	47PF	5%	50V
C467	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C468	1-162-926-11	CERAMIC CHIP	82PF	5%	50V
C469	1-164-237-11	CERAMIC CHIP	16PF	5%	50V
C470	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C471	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C472	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C501	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C502	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C503	1-162-919-11	CERAMIC CHIP	22PF	5%	50V
C504	1-162-919-11	CERAMIC CHIP	22PF	5%	50V
C505	1-162-910-11	CERAMIC CHIP	5PF	0.25PF	50V
C506	1-162-920-11	CERAMIC CHIP	27PF	5%	50V
C507	1-124-779-00	ELECT CHIP	10uF	20%	16V
C508	1-124-779-00	ELECT CHIP	10uF	20%	16V
C509	1-162-921-11	CERAMIC CHIP	33PF	5%	50V
C510	1-162-927-11	CERAMIC CHIP	100PF	5%	50V

Ref. No.	Part No.	Description			Remarks
C511	1-164-360-11	CERAMIC CHIP	0. 1uF		16V
C512	1-164-360-11	CERAMIC CHIP	0. 1uF		16V
C513	1-164-360-11	CERAMIC CHIP	0. 1uF		16V
C514	1-164-360-11	CERAMIC CHIP	0. 1uF		16V
C515	1-164-360-11	CERAMIC CHIP	0. 1uF		16V
C516	1-164-360-11	CERAMIC CHIP	0. 1uF		16V
C517	1-162-919-11	CERAMIC CHIP	22PF	5%	50V
C518	1-124-779-00	ELECT CHIP	10uF	20%	16V
C519	1-124-779-00	ELECT CHIP	10uF	20%	16V
C520	1-162-920-11	CERAMIC CHIP	27PF	5%	50V
C521	1-164-360-11	CERAMIC CHIP	0. 1uF		16V
C522	1-162-920-11	CERAMIC CHIP	27PF	5%	50V
C523	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C524	1-164-360-11	CERAMIC CHIP	0. 1uF		16V
C525	1-126-206-11	ELECT CHIP	100uF	20%	6. 3V
C526	1-164-360-11	CERAMIC CHIP	0. 1uF		16V
C527	1-164-360-11	CERAMIC CHIP	0. 1uF		16V
C528	1-164-360-11	CERAMIC CHIP	0. 1uF		16V
C529	1-164-360-11	CERAMIC CHIP	0. 1uF		16V
C530	1-164-360-11	CERAMIC CHIP	0. 1uF		16V
C531	1-126-206-11	ELECT CHIP	100uF	20%	6. 3V
C532	1-126-206-11	ELECT CHIP	100uF	20%	6. 3V
C533	1-126-206-11	ELECT CHIP	100uF	20%	6. 3V
C534	1-126-206-11	ELECT CHIP	100uF	20%	6. 3V
C535	1-162-918-11	CERAMIC CHIP	18PF	5%	50V
C536	1-162-918-11	CERAMIC CHIP	18PF	5%	50V
C537	1-124-779-00	ELECT CHIP	10uF	20%	16V
C538	1-124-779-00	ELECT CHIP	10uF	20%	16V
C539	1-164-360-11	CERAMIC CHIP	0. 1uF		16V
C540	1-164-360-11	CERAMIC CHIP	0. 1uF		16V
C541	1-164-360-11	CERAMIC CHIP	0. 1uF		16V
C542	1-164-360-11	CERAMIC CHIP	0. 1uF		16V
C543	1-164-360-11	CERAMIC CHIP	0. 1uF		16V
C544	1-128-415-11	ELECT CHIP	68uF	20%	10V
C545	1-164-360-11	CERAMIC CHIP	0. 1uF		16V
C546	1-164-360-11	CERAMIC CHIP	0. 1uF		16V
C547	1-128-415-11	ELECT CHIP	68uF	20%	10V
C548	1-164-360-11	CERAMIC CHIP	0. 1uF		16V
C549	1-164-360-11	CERAMIC CHIP	0. 1uF		16V
C550	1-124-779-00	ELECT CHIP	10uF	20%	16V
C551	1-124-779-00	ELECT CHIP	10uF	20%	16V
C553	1-162-970-11	CERAMIC CHIP	0. 01uF	10%	25V
C554	1-162-957-11	CERAMIC CHIP	220PF	5%	50V
C555	1-162-957-11	CERAMIC CHIP	220PF	5%	50V
C556	1-124-779-00	ELECT CHIP	10uF	20%	16V
C557	1-124-779-00	ELECT CHIP	10uF	20%	16V
C559	1-164-360-11	CERAMIC CHIP	0. 1uF		16V
C560	1-164-360-11	CERAMIC CHIP	0. 1uF		16V
C561	1-164-360-11	CERAMIC CHIP	0. 1uF		16V
C562	1-164-360-11	CERAMIC CHIP	0. 1uF		16V

Ref. No.	Part No.	Description			Remarks
C563	1-124-779-00	ELECT CHIP	10uF	20%	16V
C564	1-164-360-11	CERAMIC CHIP	0. 1uF		16V
C565	1-164-360-11	CERAMIC CHIP	0. 1uF		16V
C566	1-164-360-11	CERAMIC CHIP	0. 1uF		16V
C567	1-164-360-11	CERAMIC CHIP	0. 1uF		16V
C568	1-164-315-11	CERAMIC CHIP	470PF	5%	50V
C569	1-164-315-11	CERAMIC CHIP	470PF	5%	50V
C570	1-164-360-11	CERAMIC CHIP	0. 1uF		16V
C571	1-164-360-11	CERAMIC CHIP	0. 1uF		16V
C572	1-162-970-11	CERAMIC CHIP	0. 01uF	10%	25V
C573	1-164-005-11	CERAMIC CHIP	0. 47uF		25V
C574	1-164-360-11	CERAMIC CHIP	0. 1uF		16V
C575	1-164-005-11	CERAMIC CHIP	0. 47uF		25V
C576	1-164-360-11	CERAMIC CHIP	0. 1uF		16V
C577	1-126-206-11	ELECT CHIP	100uF	20%	6. 3V
C578	1-162-926-11	CERAMIC CHIP	82PF	5%	50V
C579	1-162-920-11	CERAMIC CHIP	27PF	5%	50V
C580	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C581	1-164-360-11	CERAMIC CHIP	0. 1uF		16V
C582	1-126-206-11	ELECT CHIP	100uF	20%	6. 3V
C583	1-164-360-11	CERAMIC CHIP	0. 1uF		16V
C584	1-164-360-11	CERAMIC CHIP	0. 1uF		16V
C585	1-164-360-11	CERAMIC CHIP	0. 1uF		16V
C586	1-162-921-11	CERAMIC CHIP	33PF	5%	50V
C587	1-162-921-11	CERAMIC CHIP	33PF	5%	50V
C588	1-164-360-11	CERAMIC CHIP	0. 1uF		16V
C589	1-164-360-11	CERAMIC CHIP	0. 1uF		16V
C590	1-164-360-11	CERAMIC CHIP	0. 1uF		16V
C591	1-164-360-11	CERAMIC CHIP	0. 1uF		16V
C592	1-126-206-11	ELECT CHIP	100uF	20%	6. 3V
C593	1-162-915-11	CERAMIC CHIP	10PF	0. 5PF	50V
C594	1-162-915-11	CERAMIC CHIP	10PF	0. 5PF	50V
C595	1-164-360-11	CERAMIC CHIP	0. 1uF		16V
C596	1-128-415-11	ELECT CHIP	68uF	20%	10V
C597	1-162-923-11	CERAMIC CHIP	47PF	5%	50V
C598	1-162-923-11	CERAMIC CHIP	47PF	5%	50V
C599	1-164-218-11	CERAMIC CHIP	180PF	5%	50V
C601	1-162-970-11	CERAMIC CHIP	0. 01uF	10%	25V
C602	1-164-005-11	CERAMIC CHIP	0. 47uF		25V
C603	1-164-005-11	CERAMIC CHIP	0. 47uF		25V
C604	1-162-970-11	CERAMIC CHIP	0. 01uF	10%	25V
C606	1-162-970-11	CERAMIC CHIP	0. 01uF	10%	25V
C607	1-162-970-11	CERAMIC CHIP	0. 01uF	10%	25V
C608	1-164-360-11	CERAMIC CHIP	0. 1uF		16V
C609	1-164-360-11	CERAMIC CHIP	0. 1uF		16V
C610	1-124-779-00	ELECT CHIP	10uF	20%	16V
C611	1-164-360-11	CERAMIC CHIP	0. 1uF		16V
C612	1-164-360-11	CERAMIC CHIP	0. 1uF		16V
C613	1-162-910-11	CERAMIC CHIP	5PF	0. 25PF	50V
C614	1-164-005-11	CERAMIC CHIP	0. 47uF		25V

DV-19

Ref. No.	Part No.	Description			Remarks
C615	1-162-910-11	CERAMIC CHIP	5PF	0. 25PF	50V
C616	1-164-005-11	CERAMIC CHIP	0. 47uF		25V
C617	1-126-206-11	ELECT CHIP	100uF	20%	6. 3V
C618	1-126-206-11	ELECT CHIP	100uF	20%	6. 3V
C619	1-124-779-00	ELECT CHIP	10uF	20%	16V
C620	1-164-360-11	CERAMIC CHIP	0. 1uF		16V
C621	1-164-360-11	CERAMIC CHIP	0. 1uF		16V
C622	1-164-360-11	CERAMIC CHIP	0. 1uF		16V
C623	1-162-910-11	CERAMIC CHIP	5PF	0. 25PF	50V
C624	1-164-005-11	CERAMIC CHIP	0. 47uF		25V
C625	1-164-360-11	CERAMIC CHIP	0. 1uF		16V
C626	1-162-910-11	CERAMIC CHIP	5PF	0. 25PF	50V
C627	1-164-005-11	CERAMIC CHIP	0. 47uF		25V
C628	1-164-360-11	CERAMIC CHIP	0. 1uF		16V
C629	1-126-206-11	ELECT CHIP	100uF	20%	6. 3V
C630	1-126-206-11	ELECT CHIP	100uF	20%	6. 3V
C631	1-126-206-11	ELECT CHIP	100uF	20%	6. 3V
C632	1-126-206-11	ELECT CHIP	100uF	20%	6. 3V
C633	1-164-360-11	CERAMIC CHIP	0. 1uF		16V
C634	1-164-360-11	CERAMIC CHIP	0. 1uF		16V
C635	1-164-360-11	CERAMIC CHIP	0. 1uF		16V
C636	1-164-360-11	CERAMIC CHIP	0. 1uF		16V
C637	1-164-360-11	CERAMIC CHIP	0. 1uF		16V
C638	1-164-360-11	CERAMIC CHIP	0. 1uF		16V
C639	1-164-360-11	CERAMIC CHIP	0. 1uF		16V
C640	1-164-360-11	CERAMIC CHIP	0. 1uF		16V
C641	1-164-360-11	CERAMIC CHIP	0. 1uF		16V
C642	1-164-360-11	CERAMIC CHIP	0. 1uF		16V
C643	1-126-206-11	ELECT CHIP	100uF	20%	6. 3V
C644	1-126-206-11	ELECT CHIP	100uF	20%	6. 3V
C645	1-164-360-11	CERAMIC CHIP	0. 1uF		16V
C646	1-164-360-11	CERAMIC CHIP	0. 1uF		16V
C647	1-162-908-11	CERAMIC CHIP	3PF	0. 25PF	50V
C648	1-162-908-11	CERAMIC CHIP	3PF	0. 25PF	50V
C649	1-164-360-11	CERAMIC CHIP	0. 1uF		16V
C650	1-164-360-11	CERAMIC CHIP	0. 1uF		16V
C651	1-164-360-11	CERAMIC CHIP	0. 1uF		16V
C652	1-164-360-11	CERAMIC CHIP	0. 1uF		16V
C653	1-162-908-11	CERAMIC CHIP	3PF	0. 25PF	50V
C654	1-162-908-11	CERAMIC CHIP	3PF	0. 25PF	50V
C655	1-126-206-11	ELECT CHIP	100uF	20%	6. 3V
C656	1-126-206-11	ELECT CHIP	100uF	20%	6. 3V
C657	1-164-360-11	CERAMIC CHIP	0. 1uF		16V
C658	1-164-360-11	CERAMIC CHIP	0. 1uF		16V
C659	1-164-360-11	CERAMIC CHIP	0. 1uF		16V
C660	1-126-206-11	ELECT CHIP	100uF	20%	6. 3V
C661	1-126-206-11	ELECT CHIP	100uF	20%	6. 3V
C662	1-164-360-11	CERAMIC CHIP	0. 1uF		16V
C663	1-164-360-11	CERAMIC CHIP	0. 1uF		16V
C664	1-164-360-11	CERAMIC CHIP	0. 1uF		16V

Ref. No.	Part No.	Description			Remarks
C665	1-164-360-11	CERAMIC CHIP	0. 1uF		16V
C666	1-164-360-11	CERAMIC CHIP	0. 1uF		16V
C667	1-124-779-00	ELECT CHIP	10uF	20%	16V
C668	1-124-779-00	ELECT CHIP	10uF	20%	16V
C669	1-124-779-00	ELECT CHIP	10uF	20%	16V
C670	1-124-779-00	ELECT CHIP	10uF	20%	16V
C671	1-164-360-11	CERAMIC CHIP	0. 1uF		16V
C672	1-164-360-11	CERAMIC CHIP	0. 1uF		16V
C673	1-164-360-11	CERAMIC CHIP	0. 1uF		16V
C674	1-164-360-11	CERAMIC CHIP	0. 1uF		16V
C675	1-164-360-11	CERAMIC CHIP	0. 1uF		16V
C676	1-164-360-11	CERAMIC CHIP	0. 1uF		16V
C677	1-164-360-11	CERAMIC CHIP	0. 1uF		16V
C678	1-164-360-11	CERAMIC CHIP	0. 1uF		16V
C679	1-124-779-00	ELECT CHIP	10uF	20%	16V
C680	1-124-779-00	ELECT CHIP	10uF	20%	16V
C681	1-124-779-00	ELECT CHIP	10uF	20%	16V
C682	1-124-779-00	ELECT CHIP	10uF	20%	16V
C683	1-162-970-11	CERAMIC CHIP	0. 01uF	10%	25V
C684	1-162-970-11	CERAMIC CHIP	0. 01uF	10%	25V
C685	1-164-360-11	CERAMIC CHIP	0. 1uF		16V
C686	1-164-360-11	CERAMIC CHIP	0. 1uF		16V
C687	1-124-779-00	ELECT CHIP	10uF	20%	16V
C688	1-164-360-11	CERAMIC CHIP	0. 1uF		16V
C689	1-124-779-00	ELECT CHIP	10uF	20%	16V
C690	1-164-360-11	CERAMIC CHIP	0. 1uF		16V
C691	1-164-360-11	CERAMIC CHIP	0. 1uF		16V
C692	1-164-360-11	CERAMIC CHIP	0. 1uF		16V
C693	1-164-360-11	CERAMIC CHIP	0. 1uF		16V
C694	1-162-915-11	CERAMIC CHIP	10PF	0. 5PF	50V
C695	1-164-185-11	CERAMIC CHIP	13PF	5%	50V
C696	1-164-360-11	CERAMIC CHIP	0. 1uF		16V
C697	1-164-360-11	CERAMIC CHIP	0. 1uF		16V
C698	1-162-928-11	CERAMIC CHIP	120PF	5%	50V
C699	1-162-922-11	CERAMIC CHIP	39PF	5%	50V
C701	1-164-360-11	CERAMIC CHIP	0. 1uF		16V
C702	1-126-206-11	ELECT CHIP	100uF	20%	6. 3V
C704	1-164-360-11	CERAMIC CHIP	0. 1uF		16V
C710	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C713	1-164-360-11	CERAMIC CHIP	0. 1uF		16V
C714	1-164-360-11	CERAMIC CHIP	0. 1uF		16V
C715	1-124-779-00	ELECT CHIP	10uF	20%	16V
C716	1-164-360-11	CERAMIC CHIP	0. 1uF		16V
C717	1-124-779-00	ELECT CHIP	10uF	20%	16V
C718	1-164-360-11	CERAMIC CHIP	0. 1uF		16V
C719	1-124-779-00	ELECT CHIP	10uF	20%	16V
C720	1-164-360-11	CERAMIC CHIP	0. 1uF		16V
C721	1-124-779-00	ELECT CHIP	10uF	20%	16V
C722	1-124-779-00	ELECT CHIP	10uF	20%	16V
C723	1-164-360-11	CERAMIC CHIP	0. 1uF		16V

Ref. No.	Part No.	Description			Remarks
C725	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C726	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C727	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C728	1-124-779-00	ELECT CHIP	10uF	20%	16V
C729	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C766	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C767	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C768	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C769	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C770	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C771	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C772	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C773	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C774	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C775	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C777	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C778	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C801	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C802	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C803	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C804	1-124-779-00	ELECT CHIP	10uF	20%	16V
C805	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C806	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C807	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C808	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C809	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C810	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C811	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C812	1-162-919-11	CERAMIC CHIP	22PF	5%	50V
C813	1-162-919-11	CERAMIC CHIP	22PF	5%	50V
C814	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C815	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C816	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C817	1-162-957-11	CERAMIC CHIP	220PF	5%	50V
C818	1-162-957-11	CERAMIC CHIP	220PF	5%	50V
C819	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C820	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C821	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C822	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C823	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C824	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C825	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C826	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C827	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C828	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C829	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C830	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C831	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C832	1-124-779-00	ELECT CHIP	10uF	20%	16V
C833	1-162-910-11	CERAMIC CHIP	5PF	0.25PF	50V

Ref. No.	Part No.	Description			Remarks
C834	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C835	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C836	1-164-315-11	CERAMIC CHIP	470PF	5%	50V
C837	1-164-315-11	CERAMIC CHIP	470PF	5%	50V
C838	1-164-315-11	CERAMIC CHIP	470PF	5%	50V
C839	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C840	1-124-779-00	ELECT CHIP	10uF	20%	16V
C841	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C842	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C843	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C844	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C845	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C846	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C847	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C848	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C849	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C850	1-164-185-11	CERAMIC CHIP	13PF	5%	50V
C851	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C852	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C853	1-162-910-11	CERAMIC CHIP	5PF	0.25PF	50V
C854	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C855	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C856	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C857	1-162-922-11	CERAMIC CHIP	39PF	5%	50V
C858	1-164-382-11	CERAMIC CHIP	91PF	5%	50V
C859	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C860	1-164-315-11	CERAMIC CHIP	470PF	5%	50V
C861	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C862	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C863	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C864	1-164-315-11	CERAMIC CHIP	470PF	5%	50V
C865	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C866	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C867	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C868	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C869	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C870	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C871	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C872	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C873	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C874	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C875	1-163-275-11	CERAMIC CHIP	0.001uF	5%	50V
C876	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C877	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C878	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C879	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C880	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C881	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C882	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C883	1-164-005-11	CERAMIC CHIP	0.47uF		25V

DV-19

Ref. No.	Part No.	Description			Remarks
C884	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C885	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C886	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C887	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C888	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C889	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C890	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C891	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C892	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C893	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C894	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C895	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C896	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C897	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C898	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C899	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C901	1-128-415-11	ELECT CHIP	68uF	20%	10V
C902	1-126-204-11	ELECT CHIP	47uF	20%	16V
C903	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C904	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C905	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C906	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C907	1-126-204-11	ELECT CHIP	47uF	20%	16V
C908	1-164-382-11	CERAMIC CHIP	91PF	5%	50V
C909	1-128-415-11	ELECT CHIP	68uF	20%	10V
C910	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C950	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C951	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C952	1-126-204-11	ELECT CHIP	47uF	20%	16V
C953	1-164-670-11	CERAMIC CHIP	1200PF	5%	16V
C954	1-165-176-11	CERAMIC CHIP	4700PF	10%	16V
C957	1-126-204-11	ELECT CHIP	47uF	20%	16V
C958	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C959	1-126-204-11	ELECT CHIP	47uF	20%	16V
C960	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C961	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C962	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C963	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C964	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C965	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C966	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C967	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C968	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C969	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C970	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C971	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C972	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C973	1-162-923-11	CERAMIC CHIP	47PF	5%	50V
C974	1-162-923-11	CERAMIC CHIP	47PF	5%	50V

Ref. No.	Part No.	Description	Remarks
		< CONNECTOR >	
CN001	1-580-723-11	CONNECTOR, BOARD TO BOARD 28P	
CN002	1-580-723-11	CONNECTOR, BOARD TO BOARD 28P	
* CN201	1-564-009-11	PIN, CONNECTOR 10P	
CN501	1-580-723-11	CONNECTOR, BOARD TO BOARD 28P	
CN502	1-580-723-11	CONNECTOR, BOARD TO BOARD 28P	
CN503	1-580-723-11	CONNECTOR, BOARD TO BOARD 28P	
CN504	1-580-723-11	CONNECTOR, BOARD TO BOARD 28P	
CN601	1-506-479-11	PIN, CONNECTOR 14P	
* CN602	1-564-007-11	PIN, CONNECTOR 8P	
CN701	1-691-397-11	CONNECTOR, FPC 21P	
* CN702	1-691-781-11	CONNECTOR, FPC 10P	
		< VARIABLE CAPACITOR >	
CV502	1-141-450-21	CAP, ADJ	
		< DIODE >	
D001	8-719-800-76	DIODE 1SS226	
D002	8-719-800-76	DIODE 1SS226	
D101	8-719-800-76	DIODE 1SS226	
D102	8-719-800-76	DIODE 1SS226	
D103	8-719-800-76	DIODE 1SS226	
D104	8-719-800-76	DIODE 1SS226	
D301	8-719-800-76	DIODE 1SS226	
D302	8-719-800-76	DIODE 1SS226	
D303	8-719-800-76	DIODE 1SS226	
D304	8-719-800-76	DIODE 1SS226	
D305	8-719-800-76	DIODE 1SS226	
D501	8-719-988-40	DIODE HVR17TRF	
D502	8-719-988-40	DIODE HVR17TRF	
D602	8-719-800-76	DIODE 1SS226	
		< FERRITE BEAD >	
FB001	1-543-775-11	FILTER, EMI	
FB002	1-543-775-11	FILTER, EMI	
FB003	1-543-775-11	FILTER, EMI	
FB004	1-543-775-11	FILTER, EMI	
FB005	1-543-775-11	FILTER, EMI	
FB006	1-543-775-11	FILTER, EMI	
FB007	1-543-775-11	FILTER, EMI	
FB008	1-543-775-11	FILTER, EMI	
FB009	1-543-775-11	FILTER, EMI	
FB010	1-543-775-11	FILTER, EMI	
FB011	1-543-775-11	FILTER, EMI	
FB012	1-543-775-11	FILTER, EMI	
FB013	1-543-775-11	FILTER, EMI	
FB014	1-543-775-11	FILTER, EMI	
FB015	1-543-775-11	FILTER, EMI	

Ref. No.	Part No.	Description	Remarks
FB016	1-543-775-11	FILTER, EMI	
FB017	1-543-813-21	FILTER, EMI	
FB018	1-543-813-21	FILTER, EMI	
FB019	1-543-813-21	FILTER, EMI	
FB020	1-543-813-21	FILTER, EMI	
FB021	1-543-813-21	FILTER, EMI	
FB022	1-543-813-21	FILTER, EMI	
FB023	1-543-813-21	FILTER, EMI	
FB024	1-543-813-21	FILTER, EMI	
FB025	1-543-813-21	FILTER, EMI	
FB026	1-543-813-21	FILTER, EMI	
FB027	1-543-813-21	FILTER, EMI	
FB028	1-543-775-11	FILTER, EMI	
FB029	1-543-775-11	FILTER, EMI	
FB030	1-543-775-11	FILTER, EMI	
FB031	1-543-775-11	FILTER, EMI	
FB032	1-543-775-11	FILTER, EMI	
FB033	1-543-775-11	FILTER, EMI	
FB034	1-543-775-11	FILTER, EMI	
FB035	1-543-775-11	FILTER, EMI	
FB101	1-543-775-11	FILTER, EMI	
FB102	1-543-775-11	FILTER, EMI	
FB103	1-543-775-11	FILTER, EMI	
FB104	1-543-775-11	FILTER, EMI	
FB105	1-543-775-11	FILTER, EMI	
FB106	1-543-775-11	FILTER, EMI	
FB201	1-543-813-21	FILTER, EMI	
FB202	1-543-813-21	FILTER, EMI	
FB203	1-543-813-21	FILTER, EMI	
FB204	1-543-813-21	FILTER, EMI	
FB205	1-543-813-21	FILTER, EMI	
FB206	1-543-813-21	FILTER, EMI	
FB301	1-543-813-21	FILTER, EMI	
FB302	1-543-813-21	FILTER, EMI	
FB303	1-543-813-21	FILTER, EMI	
FB304	1-543-813-21	FILTER, EMI	
FB305	1-543-813-21	FILTER, EMI	
FB306	1-543-813-21	FILTER, EMI	
FB307	1-543-813-21	FILTER, EMI	
FB308	1-543-813-21	FILTER, EMI	
FB351	1-543-813-21	FILTER, EMI	
FB352	1-543-813-21	FILTER, EMI	
FB353	1-543-813-21	FILTER, EMI	
FB354	1-543-813-21	FILTER, EMI	
FB355	1-543-813-21	FILTER, EMI	
FB356	1-543-813-21	FILTER, EMI	
FB357	1-543-813-21	FILTER, EMI	
FB501	1-543-813-21	FILTER, EMI	
FB502	1-543-813-21	FILTER, EMI	
FB503	1-543-813-21	FILTER, EMI	

Ref. No.	Part No.	Description	Remarks
FB504	1-543-813-21	FILTER, EMI	
FB505	1-543-813-21	FILTER, EMI	
FB506	1-543-813-21	FILTER, EMI	
FB507	1-543-813-21	FILTER, EMI	
FB508	1-543-813-21	FILTER, EMI	
FB509	1-543-813-21	FILTER, EMI	
FB510	1-543-775-11	FILTER, EMI	
FB511	1-543-775-11	FILTER, EMI	
FB512	1-543-775-11	FILTER, EMI	
FB513	1-543-775-11	FILTER, EMI	
FB514	1-543-775-11	FILTER, EMI	
FB515	1-543-775-11	FILTER, EMI	
FB516	1-543-775-11	FILTER, EMI	
FB517	1-543-775-11	FILTER, EMI	
FB518	1-543-775-11	FILTER, EMI	
FB519	1-543-775-11	FILTER, EMI	
FB520	1-543-775-11	FILTER, EMI	
FB521	1-543-775-11	FILTER, EMI	
FB522	1-543-775-11	FILTER, EMI	
FB523	1-543-775-11	FILTER, EMI	
FB524	1-543-775-11	FILTER, EMI	
FB525	1-543-775-11	FILTER, EMI	
FB526	1-543-775-11	FILTER, EMI	
FB527	1-543-775-11	FILTER, EMI	
FB528	1-543-775-11	FILTER, EMI	
FB529	1-543-775-11	FILTER, EMI	
FB530	1-543-775-11	FILTER, EMI	
FB531	1-543-775-11	FILTER, EMI	
FB532	1-543-775-11	FILTER, EMI	
FB533	1-543-775-11	FILTER, EMI	
FB534	1-543-775-11	FILTER, EMI	
FB535	1-543-775-11	FILTER, EMI	
FB536	1-543-775-11	FILTER, EMI	
FB537	1-543-775-11	FILTER, EMI	
FB538	1-543-775-11	FILTER, EMI	
FB539	1-543-775-11	FILTER, EMI	
FB540	1-543-775-11	FILTER, EMI	
FB541	1-543-775-11	FILTER, EMI	
FB542	1-543-775-11	FILTER, EMI	
FB543	1-543-775-11	FILTER, EMI	
FB544	1-543-775-11	FILTER, EMI	
FB545	1-543-775-11	FILTER, EMI	
FB546	1-543-775-11	FILTER, EMI	
FB547	1-543-775-11	FILTER, EMI	
FB548	1-543-813-21	FILTER, EMI	
FB601	1-543-813-21	FILTER, EMI	
FB602	1-543-813-21	FILTER, EMI	
FB603	1-543-813-21	FILTER, EMI	
FB604	1-543-813-21	FILTER, EMI	
FB605	1-543-813-21	FILTER, EMI	

DV-19

Ref. No.	Part No.	Description	Remarks
FB606	1-543-813-21	FILTER, EMI	
FB607	1-543-813-21	FILTER, EMI	
FB608	1-543-813-21	FILTER, EMI	
FB609	1-543-813-21	FILTER, EMI	
FB610	1-543-813-21	FILTER, EMI	
FB611	1-543-813-21	FILTER, EMI	
FB612	1-543-813-21	FILTER, EMI	
FB613	1-543-813-21	FILTER, EMI	
FB614	1-543-813-21	FILTER, EMI	
FB628	1-543-813-21	FILTER, EMI	
FB629	1-543-813-21	FILTER, EMI	
FB700	1-543-813-21	FILTER, EMI	
FB701	1-543-813-21	FILTER, EMI	
FB702	1-543-813-21	FILTER, EMI	
FB703	1-543-813-21	FILTER, EMI	
FB704	1-543-813-21	FILTER, EMI	
FB705	1-543-813-21	FILTER, EMI	
FB706	1-543-813-21	FILTER, EMI	
FB707	1-543-813-21	FILTER, EMI	
FB708	1-543-813-21	FILTER, EMI	
FB709	1-543-813-21	FILTER, EMI	
FB710	1-543-813-21	FILTER, EMI	
FB711	1-543-813-21	FILTER, EMI	
FB713	1-543-813-21	FILTER, EMI	
FB714	1-543-813-21	FILTER, EMI	
FB715	1-543-813-21	FILTER, EMI	
FB716	1-543-813-21	FILTER, EMI	
FB717	1-543-813-21	FILTER, EMI	
FB718	1-543-813-21	FILTER, EMI	
FB719	1-543-813-21	FILTER, EMI	
FB720	1-543-813-21	FILTER, EMI	
FB721	1-543-813-21	FILTER, EMI	
FB722	1-543-813-21	FILTER, EMI	
FB723	1-543-813-21	FILTER, EMI	
FB724	1-543-813-21	FILTER, EMI	
FB725	1-543-813-21	FILTER, EMI	
FB726	1-543-813-21	FILTER, EMI	
FB727	1-543-813-21	FILTER, EMI	
FB728	1-543-813-21	FILTER, EMI	
FB729	1-543-813-21	FILTER, EMI	
FB730	1-543-813-21	FILTER, EMI	
FB731	1-543-813-21	FILTER, EMI	
FB732	1-543-813-21	FILTER, EMI	
FB733	1-543-813-21	FILTER, EMI	
FB734	1-543-813-21	FILTER, EMI	
FB735	1-543-813-21	FILTER, EMI	
FB736	1-543-813-21	FILTER, EMI	
FB737	1-543-813-21	FILTER, EMI	
FB738	1-543-813-21	FILTER, EMI	
FB739	1-543-813-21	FILTER, EMI	

Ref. No.	Part No.	Description	Remarks
FB740	1-543-813-21	FILTER, EMI	
FB741	1-543-813-21	FILTER, EMI	
FB742	1-543-813-21	FILTER, EMI	
FB743	1-543-813-21	FILTER, EMI	
FB744	1-543-813-21	FILTER, EMI	
FB745	1-543-813-21	FILTER, EMI	
FB746	1-543-813-21	FILTER, EMI	
FB747	1-543-813-21	FILTER, EMI	
FB748	1-543-813-21	FILTER, EMI	
FB749	1-543-813-21	FILTER, EMI	
FB750	1-543-813-21	FILTER, EMI	
FB751	1-543-813-21	FILTER, EMI	
FB752	1-543-813-21	FILTER, EMI	
FB753	1-543-813-21	FILTER, EMI	
FB754	1-543-813-21	FILTER, EMI	
FB755	1-543-813-21	FILTER, EMI	
FB756	1-543-813-21	FILTER, EMI	
FB757	1-543-813-21	FILTER, EMI	
FB758	1-543-813-21	FILTER, EMI	
FB759	1-543-813-21	FILTER, EMI	
FB760	1-543-813-21	FILTER, EMI	
FB761	1-543-813-21	FILTER, EMI	
FB762	1-543-813-21	FILTER, EMI	
FB763	1-543-813-21	FILTER, EMI	
FB764	1-543-813-21	FILTER, EMI	
FB765	1-543-813-21	FILTER, EMI	
FB766	1-543-813-21	FILTER, EMI	
FB767	1-543-813-21	FILTER, EMI	
FB768	1-543-813-21	FILTER, EMI	
FB769	1-543-813-21	FILTER, EMI	
FB770	1-543-813-21	FILTER, EMI	
FB771	1-543-813-21	FILTER, EMI	
FB772	1-543-813-21	FILTER, EMI	
FB773	1-543-813-21	FILTER, EMI	
FB774	1-543-813-21	FILTER, EMI	
FB775	1-543-813-21	FILTER, EMI	
FB776	1-543-813-21	FILTER, EMI	
FB777	1-543-813-21	FILTER, EMI	
FB778	1-543-813-21	FILTER, EMI	
FB779	1-543-813-21	FILTER, EMI	
FB780	1-543-813-21	FILTER, EMI	
FB781	1-543-813-21	FILTER, EMI	
FB782	1-543-813-21	FILTER, EMI	
FB783	1-543-813-21	FILTER, EMI	
FB784	1-543-813-21	FILTER, EMI	
FB785	1-543-813-21	FILTER, EMI	
FB786	1-543-813-21	FILTER, EMI	
FB787	1-543-813-21	FILTER, EMI	
FB788	1-543-813-21	FILTER, EMI	
FB789	1-543-813-21	FILTER, EMI	

Ref. No.	Part No.	Description	Remarks
FB790	1-543-813-21	FILTER, EMI	
FB791	1-543-813-21	FILTER, EMI	
FB792	1-543-813-21	FILTER, EMI	
FB793	1-543-813-21	FILTER, EMI	
FB794	1-543-813-21	FILTER, EMI	
FB795	1-543-813-21	FILTER, EMI	
FB796	1-543-813-21	FILTER, EMI	
FB797	1-543-813-21	FILTER, EMI	
FB798	1-543-813-21	FILTER, EMI	
FB799	1-543-813-21	FILTER, EMI	
FB951	1-543-813-21	FILTER, EMI	
FB952	1-543-813-21	FILTER, EMI	
FB953	1-543-813-21	FILTER, EMI	
FB954	1-543-813-21	FILTER, EMI	
FB955	1-543-813-21	FILTER, EMI	
FB956	1-543-813-21	FILTER, EMI	
FB957	1-543-813-21	FILTER, EMI	
FB958	1-543-813-21	FILTER, EMI	
FB959	1-543-813-21	FILTER, EMI	
FB960	1-543-813-21	FILTER, EMI	
		< FILTER >	
FL101	1-415-551-11	DELAY LINE 140NS	
FL401	1-239-593-21	FILTER, LC	
FL402	1-239-593-21	FILTER, LC	
FL501	1-236-071-11	ENCAPSULATED COMPONENT	
FL950	1-236-381-11	LPF	
FL951	1-236-381-11	LPF	
		< IC >	
IC001	8-752-334-55	IC CXD1175AM (A/D CONVERTER)	
IC002	8-752-334-55	IC CXD1175AM (A/D CONVERTER)	
IC003	8-752-342-61	IC CXD2105AQ (DIGITAL Y/C SEPARATOR (WITH D/A CONVERTER))	
IC004	8-752-342-61	IC CXD2105AQ (DIGITAL Y/C SEPARATOR (WITH D/A CONVERTER))	
IC005	8-759-710-12	IC NJM2230M (A-BUS SYNC DET)	
IC006	8-759-710-12	IC NJM2230M (B-BUS SYNC DET)	
IC101	8-759-032-14	IC MC74HC08AF (GATE)	
IC102	8-759-030-55	IC MC1496M (B-Y MOD)	
IC103	8-759-030-55	IC MC1496M (R-Y MOD)	
IC104	8-752-033-58	IC V7040 (NTSC/PAL ENCODER)	
IC105	8-759-030-55	IC MC1496M (R-Y MOD)	
IC106	8-759-030-55	IC MC1496M (B-Y MOD)	
IC107	8-759-011-65	IC MC74HC4053F (SWITCH)	
IC108	8-759-150-06	IC uPC324G2-E2 (AGC DET AMP)	
IC109	8-759-504-47	IC TL026CPS (VCA)	
IC110	8-759-242-74	IC TC7W04F (BUFFER)	
IC201	8-759-011-65	IC MC74HC4053F (SELECT SW)	
IC202	8-759-710-62	IC NJM2246M (V/PGM SELECT SWITCH)	
IC203	8-759-011-65	IC MC74HC4053F (EV BST SELECT)	
IC204	8-759-603-56	IC M51272FP (NTSC/PAL ENCODER)	
IC205	8-759-710-61	IC NJM2229M (SYNC SEPARATOR)	
IC206	8-759-630-81	IC M50455-079FP (CHARACTOR GENERATOR)	
IC207	8-759-242-74	IC TC7W04F (INV)	
IC301	8-759-032-20	IC MC74HC32AF (DELAY)	
IC302	8-759-239-23	IC TC74HC86AF (GATE)	
IC303	8-759-032-23	IC MC74HC74AF (DATA LATCH)	
IC304	8-759-011-65	IC MC74HC4053F (SELECT SW)	
IC305	8-759-032-01	IC MC74HC00AF (GATE)	
IC307	8-759-011-65	IC MC74HC4053F (SELECT SW)	
IC308	8-759-011-65	IC MC74HC4053F (SELECT SW)	
IC401	8-759-242-74	IC TC7W04F (INV)	
IC402	8-759-925-78	IC SN74HC10ANS (SELECT GATE)	
IC403	8-752-053-21	IC CXA1211M (VCA)	
IC404	8-759-230-XX	IC TC74HC4053AF (R/BC SELECT SW)	
IC405	8-759-230-XX	IC TC74HC4053AF (R/BC SELECT SW)	
IC406	8-759-230-XX	IC TC74HC4053AF (R/BC SELECT SW)	
IC407	8-759-230-XX	IC TC74HC4053AF (R/BC SELECT SW)	
IC501	8-759-242-74	IC TC7W04F (CHROMA HUE PHASE SHIFTER)	
IC502	8-759-242-74	IC TC7W04F (CHROMA HUE PHASE SHIFTER)	
IC503	8-759-902-88	IC SN74LS123NS (M.M)	
IC504	8-752-332-67	IC CXD1217M (SYNC GENELATOR)	
IC505	8-759-030-16	IC MC34182M (CHROMA HUE PHASE SHIFTER)	
IC506	8-759-902-88	IC SN74LS123NS (M.M)	
IC507	8-759-032-50	IC MC74HC241AF (SYNC DRIVER)	
IC508	8-759-242-74	IC TC7W04F (INV)	
IC509	8-759-822-XX	IC L88MS05T-FA-TL (+5V REG)	
IC510	8-759-822-XX	IC L88MS05T-FA-TL (+5V REG)	
IC511	8-759-242-68	IC TC7W32F (READOUT BLKG)	
IC512	8-759-822-XX	IC L88MS05T-FA-TL (+5V REG)	
IC513	8-759-822-XX	IC L88MS05T-FA-TL (+5V REG)	
IC514	8-759-030-16	IC MC34182M (CHROMA HUE PHASE SHIFTER)	
IC515	8-759-902-88	IC SN74LS123NS (M.M)	
IC516	8-759-055-75	IC uPD75104G-633-1B (MEMORY CONTROL MICROCOMPUTER)	
IC517	8-759-206-28	IC TC74HC123F (M.M)	
IC518	8-759-926-98	IC SN74HC4040ANS (ADVANCE SYNC GENERATOR)	
IC519	8-759-030-16	IC MC34182M (HCENT PHASE SHIFTER)	
IC520	8-759-926-08	IC SN74HC133NS (ADVANCE SYNC GENERATOR)	
IC521	8-759-907-81	IC SN74LS221NS (M.M)	
IC522	8-759-032-23	IC MC74HC74AF (D-LATCH)	
IC523	8-752-332-67	IC CXD1217M (SYNC GENERATOR)	
IC524	8-752-306-51	IC CX23065A (PHASE COMP)	
IC525	8-759-032-01	IC MC74HC00AF (KEY START SELECT)	
IC526	8-759-242-74	IC TC7W04F (MAIN & WIPE MICON CLOCK GENERATOR)	
IC527	8-759-242-76	IC TC7W08F (GATE)	
IC528	8-759-822-XX	IC L88MS05T-FA-TL (+5V REG)	
IC529	8-759-277-76	IC uPD78P324GJ-5BJ-991 (WIPE GEOME TRY PROCESSOR)	
IC530	8-759-242-74	IC TC7W04F (AMP)	

Ref. No.	Part No.	Description	Remarks
IC531	8-759-979-37	IC MSM72H017GS-VK (WIPE PATTERN GENERATOR)	
IC532	8-759-032-23	IC MC74HC74AF (D-LATCH)	
IC533	8-759-239-23	IC TC74HC86AF (GATE)	
IC534	8-759-031-84	IC SC7S04F (INV)	
IC535	8-759-822-XX	IC L88MS05T-FA-TL (+5V REG)	
IC536	8-759-032-23	IC MC74HC74AF (ADVANCE SYNC GENERATOR)	
IC537	8-759-242-72	IC TC7W00F (ADVANCE SYNC GENERATOR)	
IC539	8-759-242-68	IC TC7W32F (GATE)	
IC540	8-759-007-80	IC MC74HC175F (SHIFT COUNTER)	
IC541	8-759-180-86	IC TC7W74F-TE12L (SHIFT COUNTER)	
IC542	8-759-926-97	IC SN74HC4024NS (SHIFT COUNTER)	
IC543	8-759-038-46	IC SC7S00F (INV)	
IC602	8-759-011-65	IC MC74HC4053F (SWITCH)	
IC603	8-759-032-14	IC MC74HC08AF (GATE)	
IC604	8-759-242-74	IC TC7W04F (INV)	
IC605	8-759-011-65	IC MC74HC4053F (SWITCH)	
IC606	8-759-242-68	IC TC7W32F (OR)	
IC607	8-759-908-92	IC TL084CNS (BUFFER)	
IC608	8-759-030-55	IC MC1496M (MOD)	
IC609	8-759-030-55	IC MC1496M (MOD)	
IC610	8-759-030-55	IC MC1496M (MOD)	
IC611	8-759-030-55	IC MC1496M (MOD)	
IC612	8-759-239-23	IC TC74HC86AF (GATE)	
IC613	8-759-011-65	IC MC74HC4053F (SWITCH)	
IC614	8-759-011-64	IC MC74HC4052F (SWITCH)	
IC615	8-759-603-56	IC M51272FP (NTSC/PAL ENCODER)	
IC616	8-759-011-65	IC MC74HC4053F (SWITCH)	
IC617	8-759-011-65	IC MC74HC4053F (SWITCH)	
IC618	8-759-011-65	IC MC74HC4053F (SWITCH)	
IC619	8-759-603-56	IC M51272FP (NTSC/PAL ENCODER)	
IC620	8-759-030-55	IC MC1496M (MOD)	
IC621	8-759-030-55	IC MC1496M (MOD)	
IC622	8-752-052-73	IC CXA1451M (75 DRIVER)	
IC623	8-752-052-73	IC CXA1451M (75 DRIVER)	
IC624	8-752-052-73	IC CXA1451M (75 DRIVER)	
IC625	8-752-052-73	IC CXA1451M (75 DRIVER)	
IC626	8-759-245-79	IC TA79005S (-5V REG)	
IC627	8-759-144-82	IC uPC2405HF (+5V REG)	
IC628	8-759-245-45	IC TA78L09F (+9V REG)	
IC629	8-759-242-78	IC TC7W02F (OR)	
IC701	8-759-822-XX	IC L88MS05T-FA-TL (+5V REG)	
IC703	8-759-937-56	IC S-8054ALB-LM-S (RESET)	
IC704	8-759-635-27	IC M62352GP (EVR D/A CONVERTER)	
IC705	8-759-635-27	IC M62352GP (EVR D/A CONVERTER)	
IC706	8-759-635-27	IC M62352GP (EVR D/A CONVERTER)	
IC707	8-759-635-27	IC M62352GP (EVR D/A CONVERTER)	
IC709	8-759-551-68	IC M6M80021FP (EEPROM)	
IC710	8-759-551-68	IC M6M80021FP (EEPROM)	
IC711	8-759-938-68	IC CXD1095Q (I/O EXPANDER)	
IC730	8-759-277-75	IC M37702E4A-GDX991-FP (MAIN MICROCOMPUTER)	

Ref. No.	Part No.	Description	Remarks
IC950	8-759-505-98	IC MB620461 (LUMI KEY/CHROMA KEY)	
IC951	8-759-907-81	IC SN74LS221NS (M.M)	
IC952	8-752-334-64	IC CXD1171M (D/A CONVERTER)	
IC954	8-752-334-64	IC CXD1171M (D/A CONVERTER)	
IC955	8-759-234-20	IC TC7S08F	

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L001	1-410-382-31	INDUCTOR CHIP 12uH	
L002	1-410-382-31	INDUCTOR CHIP 12uH	
L005	1-410-387-11	INDUCTOR CHIP 33uH	
L006	1-410-387-11	INDUCTOR CHIP 33uH	
L008	1-410-387-11	INDUCTOR CHIP 33uH	
L010	1-410-387-11	INDUCTOR CHIP 33uH	
L101	1-410-386-11	INDUCTOR CHIP 27uH	
L102	1-410-387-11	INDUCTOR CHIP 33uH	
L103	1-410-384-31	INDUCTOR CHIP 18uH	
L201	1-410-389-31	INDUCTOR CHIP 47uH	
L202	1-410-393-11	INDUCTOR CHIP 100uH	
L203	1-410-393-11	INDUCTOR CHIP 100uH	
L204	1-410-386-11	INDUCTOR CHIP 27uH	
L205	1-410-387-11	INDUCTOR CHIP 33uH	
L206	1-410-384-31	INDUCTOR CHIP 18uH	
L207	1-410-658-31	INDUCTOR CHIP 220uH	
L208	1-410-658-31	INDUCTOR CHIP 220uH	
L209	1-410-386-11	INDUCTOR CHIP 27uH	
L210	1-410-386-11	INDUCTOR CHIP 27uH	
L211	1-410-383-31	INDUCTOR CHIP 15uH	
L501	1-410-658-31	INDUCTOR CHIP 220uH	
L502	1-410-658-31	INDUCTOR CHIP 220uH	
L503	1-410-384-31	INDUCTOR CHIP 18uH	
L504	1-410-392-11	INDUCTOR CHIP 82uH	
L601	1-410-658-31	INDUCTOR CHIP 220uH	
L602	1-410-658-31	INDUCTOR CHIP 220uH	
L603	1-410-658-31	INDUCTOR CHIP 220uH	
L604	1-410-658-31	INDUCTOR CHIP 220uH	
L605	1-410-658-31	INDUCTOR CHIP 220uH	
L606	1-410-658-31	INDUCTOR CHIP 220uH	
L607	1-410-658-31	INDUCTOR CHIP 220uH	
L608	1-410-658-31	INDUCTOR CHIP 220uH	
L609	1-410-389-31	INDUCTOR CHIP 47uH	
L610	1-410-386-11	INDUCTOR CHIP 27uH	
L611	1-410-387-11	INDUCTOR CHIP 33uH	
L612	1-410-384-31	INDUCTOR CHIP 18uH	
L613	1-412-033-11	INDUCTOR CHIP 220uH	
L614	1-412-033-11	INDUCTOR CHIP 220uH	
L615	1-412-033-11	INDUCTOR CHIP 220uH	
L616	1-412-033-11	INDUCTOR CHIP 220uH	
L617	1-410-393-11	INDUCTOR CHIP 100uH	
L618	1-410-393-11	INDUCTOR CHIP 100uH	
L619	1-410-658-31	INDUCTOR CHIP 220uH	
L620	1-410-658-31	INDUCTOR CHIP 220uH	
L621	1-410-658-31	INDUCTOR CHIP 220uH	

Ref. No.	Part No.	Description	Remarks
L622	1-410-658-31	INDUCTOR CHIP 220uH	
L623	1-410-386-11	INDUCTOR CHIP 27uH	
L624	1-410-387-11	INDUCTOR CHIP 33uH	
L625	1-410-384-31	INDUCTOR CHIP 18uH	
L626	1-410-658-31	INDUCTOR CHIP 220uH	
L627	1-410-658-31	INDUCTOR CHIP 220uH	
		< TRANSISTOR >	
Q001	8-729-216-22	TRANSISTOR 2SA1162-G	
Q002	8-729-216-22	TRANSISTOR 2SA1162-G	
Q003	8-729-216-22	TRANSISTOR 2SA1162-G	
Q004	8-729-216-22	TRANSISTOR 2SA1162-G	
Q005	8-729-901-01	TRANSISTOR DTC144EK	
Q006	8-729-901-01	TRANSISTOR DTC144EK	
Q101	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q102	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q103	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q104	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q105	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q106	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q107	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q108	8-729-216-22	TRANSISTOR 2SA1162-G	
Q109	8-729-216-22	TRANSISTOR 2SA1162-G	
Q110	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q111	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q112	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q113	8-729-216-22	TRANSISTOR 2SA1162-G	
Q114	8-729-216-22	TRANSISTOR 2SA1162-G	
Q115	8-729-216-22	TRANSISTOR 2SA1162-G	
Q116	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q117	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q118	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q119	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q120	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q121	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q122	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q123	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q124	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q125	8-729-216-22	TRANSISTOR 2SA1162-G	
Q126	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q127	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q128	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q129	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q130	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q131	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q201	8-729-216-22	TRANSISTOR 2SA1162-G	
Q202	8-729-216-22	TRANSISTOR 2SA1162-G	
Q203	8-729-120-28	TRANSISTOR 2SC1623-L5L6	

Ref. No.	Part No.	Description	Remarks
Q204	8-729-216-22	TRANSISTOR 2SA1162-G	
Q205	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q206	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q207	8-729-216-22	TRANSISTOR 2SA1162-G	
Q208	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q209	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q210	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q211	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q212	8-729-216-22	TRANSISTOR 2SA1162-G	
Q213	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q214	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q215	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q216	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q217	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q218	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q219	8-729-216-22	TRANSISTOR 2SA1162-G	
Q301	8-729-140-47	TRANSISTOR 2SC3735-L-B35	
Q302	8-729-019-10	TRANSISTOR 2SA1464-Y12Y13Y14	
Q303	8-729-140-47	TRANSISTOR 2SC3735-L-B35	
Q304	8-729-019-10	TRANSISTOR 2SA1464-Y12Y13Y14	
Q305	8-729-216-22	TRANSISTOR 2SA1162-G	
Q306	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q307	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q308	8-729-216-22	TRANSISTOR 2SA1162-G	
Q309	8-729-216-22	TRANSISTOR 2SA1162-G	
Q310	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q401	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q402	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q403	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q404	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q405	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q406	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q407	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q408	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q409	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q410	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q411	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q412	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q413	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q414	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q415	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q416	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q417	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q418	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q501	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q502	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q503	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q601	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q602	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q603	8-729-120-28	TRANSISTOR 2SC1623-L5L6	

DV-19

Ref. No.	Part No.	Description	Remarks
Q604	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q605	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q606	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q607	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q608	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q609	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q610	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q611	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q612	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q613	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q614	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q615	8-729-216-22	TRANSISTOR 2SA1162-G	
Q616	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q617	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q618	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q619	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q620	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q621	8-729-216-22	TRANSISTOR 2SA1162-G	
Q622	8-729-216-22	TRANSISTOR 2SA1162-G	
Q623	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q624	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q625	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q626	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q627	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q628	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q629	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q630	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q631	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q632	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q633	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q634	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q635	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q636	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q637	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q638	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q639	8-729-216-22	TRANSISTOR 2SA1162-G	
Q640	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q641	8-729-216-22	TRANSISTOR 2SA1162-G	
Q642	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q701	8-729-901-01	TRANSISTOR DTC144EK	
Q702	8-729-901-01	TRANSISTOR DTC144EK	
Q703	8-729-901-01	TRANSISTOR DTC144EK	
Q950	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q951	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q952	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q953	8-729-120-28	TRANSISTOR 2SC1623-L5L6	

Ref. No.	Part No.	Description			Remarks
		< RESISTOR >			
R001	1-216-805-11	METAL CHIP	47	5%	1/16W
R002	1-216-805-11	METAL CHIP	47	5%	1/16W
R003	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R004	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R005	1-218-706-11	METAL CHIP	3.9K	0.50%	1/16W
R006	1-218-706-11	METAL CHIP	3.9K	0.50%	1/16W
R007	1-218-851-11	METAL CHIP	1.5K	0.50%	1/16W
R008	1-218-676-11	METAL CHIP	220	0.50%	1/16W
R009	1-218-705-11	METAL CHIP	3.6K	0.50%	1/16W
R010	1-218-705-11	METAL CHIP	3.6K	0.50%	1/16W
R011	1-218-676-11	METAL CHIP	220	0.50%	1/16W
R012	1-218-851-11	METAL CHIP	1.5K	0.50%	1/16W
R013	1-218-706-11	METAL CHIP	3.9K	0.50%	1/16W
R014	1-218-706-11	METAL CHIP	3.9K	0.50%	1/16W
R015	1-218-706-11	METAL CHIP	3.9K	0.50%	1/16W
R016	1-218-706-11	METAL CHIP	3.9K	0.50%	1/16W
R017	1-218-851-11	METAL CHIP	1.5K	0.50%	1/16W
R018	1-218-676-11	METAL CHIP	220	0.50%	1/16W
R019	1-218-705-11	METAL CHIP	3.6K	0.50%	1/16W
R020	1-218-705-11	METAL CHIP	3.6K	0.50%	1/16W
R021	1-218-676-11	METAL CHIP	220	0.50%	1/16W
R022	1-218-851-11	METAL CHIP	1.5K	0.50%	1/16W
R023	1-218-706-11	METAL CHIP	3.9K	0.50%	1/16W
R024	1-218-706-11	METAL CHIP	3.9K	0.50%	1/16W
R025	1-216-817-11	METAL CHIP	470	5%	1/16W
R026	1-216-821-11	METAL CHIP	1K	5%	1/16W
R027	1-216-817-11	METAL CHIP	470	5%	1/16W
R028	1-216-821-11	METAL CHIP	1K	5%	1/16W
R029	1-216-817-11	METAL CHIP	470	5%	1/16W
R030	1-216-821-11	METAL CHIP	1K	5%	1/16W
R031	1-216-817-11	METAL CHIP	470	5%	1/16W
R032	1-216-821-11	METAL CHIP	1K	5%	1/16W
R033	1-216-838-11	METAL CHIP	27K	5%	1/16W
R034	1-216-841-11	METAL CHIP	47K	5%	1/16W
R035	1-216-838-11	METAL CHIP	27K	5%	1/16W
R036	1-216-841-11	METAL CHIP	47K	5%	1/16W
R037	1-216-864-11	METAL CHIP	0	5%	1/16W
R038	1-216-864-11	METAL CHIP	0	5%	1/16W
R051	1-218-692-11	METAL CHIP	1K	0.50%	1/16W
R052	1-218-692-11	METAL CHIP	1K	0.50%	1/16W
R081	1-216-817-11	METAL CHIP	470	5%	1/16W
R082	1-216-817-11	METAL CHIP	470	5%	1/16W
R083	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R084	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R085	1-216-831-11	METAL CHIP	6.8K	5%	1/16W
R086	1-216-831-11	METAL CHIP	6.8K	5%	1/16W
R087	1-216-835-11	METAL CHIP	15K	5%	1/16W
R088	1-216-835-11	METAL CHIP	15K	5%	1/16W
R089	1-216-824-11	METAL CHIP	1.8K	5%	1/16W
R090	1-216-824-11	METAL CHIP	1.8K	5%	1/16W

Ref. No.	Part No.	Description			Remarks
R091	1-216-824-11	METAL CHIP	1.8K	5%	1/16W
R092	1-218-699-11	METAL CHIP	2K	0.50%	1/16W
R093	1-216-828-11	METAL CHIP	3.9K	5%	1/16W
R094	1-218-836-11	METAL CHIP	360	0.50%	1/16W
R095	1-216-817-11	METAL CHIP	470	5%	1/16W
R096	1-216-828-11	METAL CHIP	3.9K	5%	1/16W
R097	1-218-836-11	METAL CHIP	360	0.50%	1/16W
R098	1-216-817-11	METAL CHIP	470	5%	1/16W
R099	1-216-815-11	METAL CHIP	330	5%	1/16W
R100	1-216-815-11	METAL CHIP	330	5%	1/16W
R101	1-216-815-11	METAL CHIP	330	5%	1/16W
R102	1-216-821-11	METAL CHIP	1K	5%	1/16W
R103	1-216-817-11	METAL CHIP	470	5%	1/16W
R104	1-218-699-11	METAL CHIP	2K	0.50%	1/16W
R105	1-216-817-11	METAL CHIP	470	5%	1/16W
R106	1-216-821-11	METAL CHIP	1K	5%	1/16W
R107	1-216-817-11	METAL CHIP	470	5%	1/16W
R108	1-216-817-11	METAL CHIP	470	5%	1/16W
R109	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R110	1-216-821-11	METAL CHIP	1K	5%	1/16W
R111	1-218-722-11	METAL CHIP	18K	0.50%	1/16W
R112	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R113	1-218-866-11	METAL CHIP	6.2K	0.50%	1/16W
R114	1-216-833-11	METAL CHIP	10K	5%	1/16W
R115	1-216-833-11	METAL CHIP	10K	5%	1/16W
R116	1-218-699-11	METAL CHIP	2K	0.50%	1/16W
R117	1-218-699-11	METAL CHIP	2K	0.50%	1/16W
R118	1-216-828-11	METAL CHIP	3.9K	5%	1/16W
R119	1-216-828-11	METAL CHIP	3.9K	5%	1/16W
R120	1-218-836-11	METAL CHIP	360	0.50%	1/16W
R121	1-216-817-11	METAL CHIP	470	5%	1/16W
R122	1-218-836-11	METAL CHIP	360	0.50%	1/16W
R123	1-216-817-11	METAL CHIP	470	5%	1/16W
R124	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R125	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R126	1-216-817-11	METAL CHIP	470	5%	1/16W
R127	1-216-817-11	METAL CHIP	470	5%	1/16W
R128	1-216-817-11	METAL CHIP	470	5%	1/16W
R129	1-216-817-11	METAL CHIP	470	5%	1/16W
R130	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R131	1-218-692-11	METAL CHIP	1K	0.50%	1/16W
R132	1-216-833-11	METAL CHIP	10K	5%	1/16W
R133	1-216-817-11	METAL CHIP	470	5%	1/16W
R134	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R135	1-218-866-11	METAL CHIP	6.2K	0.50%	1/16W
R136	1-218-722-11	METAL CHIP	18K	0.50%	1/16W
R137	1-218-692-11	METAL CHIP	1K	0.50%	1/16W
R138	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R139	1-218-692-11	METAL CHIP	1K	0.50%	1/16W
R140	1-216-821-11	METAL CHIP	1K	5%	1/16W

Ref. No.	Part No.	Description			Remarks
R141	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R142	1-218-676-11	METAL CHIP	220	0.50%	1/16W
R143	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R144	1-216-809-11	METAL CHIP	100	5%	1/16W
R145	1-218-851-11	METAL CHIP	1.5K	0.50%	1/16W
R146	1-218-706-11	METAL CHIP	3.9K	0.50%	1/16W
R147	1-218-692-11	METAL CHIP	1K	0.50%	1/16W
R148	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R149	1-216-809-11	METAL CHIP	100	5%	1/16W
R150	1-218-668-11	METAL CHIP	100	0.50%	1/16W
R151	1-218-670-11	METAL CHIP	120	0.50%	1/16W
R152	1-216-817-11	METAL CHIP	470	5%	1/16W
R153	1-216-857-11	METAL CHIP	1M	5%	1/16W
R154	1-216-831-11	METAL CHIP	6.8K	5%	1/16W
R155	1-216-835-11	METAL CHIP	15K	5%	1/16W
R156	1-216-821-11	METAL CHIP	1K	5%	1/16W
R157	1-216-821-11	METAL CHIP	1K	5%	1/16W
R158	1-216-823-11	METAL CHIP	1.5K	5%	1/16W
R159	1-216-823-11	METAL CHIP	1.5K	5%	1/16W
R160	1-218-708-11	METAL CHIP	4.7K	0.50%	1/16W
R161	1-216-817-11	METAL CHIP	470	5%	1/16W
R162	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R163	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R164	1-216-821-11	METAL CHIP	1K	5%	1/16W
R165	1-216-864-11	METAL CHIP	0	5%	1/16W
R166	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R167	1-218-867-11	METAL CHIP	6.8K	0.50%	1/16W
R168	1-216-839-11	METAL CHIP	33K	5%	1/16W
R169	1-216-821-11	METAL CHIP	1K	5%	1/16W
R170	1-216-821-11	METAL CHIP	1K	5%	1/16W
R171	1-216-830-11	METAL CHIP	5.6K	5%	1/16W
R172	1-218-716-11	METAL CHIP	10K	0.50%	1/16W
R173	1-216-832-11	METAL CHIP	8.2K	5%	1/16W
R174	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R175	1-216-817-11	METAL CHIP	470	5%	1/16W
R176	1-218-716-11	METAL CHIP	10K	0.50%	1/16W
R177	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R178	1-216-831-11	METAL CHIP	6.8K	5%	1/16W
R179	1-216-835-11	METAL CHIP	15K	5%	1/16W
R180	1-216-817-11	METAL CHIP	470	5%	1/16W
R181	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R182	1-216-817-11	METAL CHIP	470	5%	1/16W
R183	1-216-821-11	METAL CHIP	1K	5%	1/16W
R184	1-216-823-11	METAL CHIP	1.5K	5%	1/16W
R185	1-216-822-11	METAL CHIP	1.2K	5%	1/16W
R186	1-216-828-11	METAL CHIP	3.9K	5%	1/16W
R187	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R188	1-218-706-11	METAL CHIP	3.9K	5%	1/16W
R189	1-216-835-11	METAL CHIP	15K	5%	1/16W
R190	1-216-830-11	METAL CHIP	5.6K	5%	1/16W

DV-19

Ref. No.	Part No.	Description			Remarks
R191	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R192	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R193	1-216-817-11	METAL CHIP	470	5%	1/16W
R194	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R195	1-216-817-11	METAL CHIP	470	5%	1/16W
R196	1-218-716-11	METAL CHIP	10K	0.50%	1/16W
R201	1-218-845-11	METAL CHIP	820	0.50%	1/16W
R202	1-218-845-11	METAL CHIP	820	0.50%	1/16W
R203	1-218-716-11	METAL CHIP	10K	0.50%	1/16W
R204	1-218-716-11	METAL CHIP	10K	0.50%	1/16W
R205	1-218-692-11	METAL CHIP	1K	0.50%	1/16W
R206	1-218-698-11	METAL CHIP	1.8K	0.50%	1/16W
R207	1-218-851-11	METAL CHIP	1.5K	0.50%	1/16W
R208	1-218-692-11	METAL CHIP	1K	0.50%	1/16W
R209	1-216-817-11	METAL CHIP	470	5%	1/16W
R210	1-216-817-11	METAL CHIP	470	5%	1/16W
R211	1-216-809-11	METAL CHIP	100	5%	1/16W
R212	1-216-817-11	METAL CHIP	470	5%	1/16W
R213	1-216-817-11	METAL CHIP	470	5%	1/16W
R214	1-216-818-11	METAL CHIP	560	5%	1/16W
R215	1-218-692-11	METAL CHIP	1K	0.50%	1/16W
R216	1-216-817-11	METAL CHIP	470	5%	1/16W
R217	1-218-692-11	METAL CHIP	1K	0.50%	1/16W
R218	1-216-821-11	METAL CHIP	1K	5%	1/16W
R219	1-218-692-11	METAL CHIP	1K	0.50%	1/16W
R220	1-216-832-11	METAL CHIP	8.2K	5%	1/16W
R221	1-218-692-11	METAL CHIP	1K	0.50%	1/16W
R222	1-216-816-11	METAL CHIP	390	5%	1/16W
R223	1-216-821-11	METAL CHIP	1K	5%	1/16W
R224	1-218-697-11	METAL CHIP	1.6K	0.50%	1/16W
R225	1-218-697-11	METAL CHIP	1.6K	0.50%	1/16W
R226	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R227	1-216-823-11	METAL CHIP	1.5K	5%	1/16W
R228	1-216-833-11	METAL CHIP	10K	5%	1/16W
R229	1-216-833-11	METAL CHIP	10K	5%	1/16W
R230	1-216-839-11	METAL CHIP	33K	5%	1/16W
R231	1-216-849-11	METAL CHIP	220K	5%	1/16W
R232	1-216-841-11	METAL CHIP	47K	5%	1/16W
R233	1-216-846-11	METAL CHIP	120K	5%	1/16W
R234	1-216-833-11	METAL CHIP	10K	5%	1/16W
R235	1-218-699-11	METAL CHIP	2K	0.50%	1/16W
R236	1-216-833-11	METAL CHIP	10K	5%	1/16W
R237	1-218-692-11	METAL CHIP	1K	0.50%	1/16W
R238	1-216-833-11	METAL CHIP	10K	5%	1/16W
R239	1-216-817-11	METAL CHIP	470	5%	1/16W
R240	1-216-849-11	METAL CHIP	220K	5%	1/16W
R241	1-216-821-11	METAL CHIP	1K	5%	1/16W
R242	1-216-818-11	METAL CHIP	560	5%	1/16W
R243	1-216-824-11	METAL CHIP	1.8K	5%	1/16W
R244	1-216-829-11	METAL CHIP	4.7K	5%	1/16W

Ref. No.	Part No.	Description			Remarks
R245	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R246	1-218-692-11	METAL CHIP	1K	0.50%	1/16W
R249	1-216-817-11	METAL CHIP	470	5%	1/16W
R250	1-218-845-11	METAL CHIP	820	0.50%	1/16W
R251	1-216-823-11	METAL CHIP	1.5K	5%	1/16W
R252	1-216-814-11	METAL CHIP	270	5%	1/16W
R253	1-218-833-11	METAL CHIP	270	0.50%	1/16W
R255	1-216-821-11	METAL CHIP	1K	5%	1/16W
R256	1-218-692-11	METAL CHIP	1K	0.50%	1/16W
R258	1-216-821-11	METAL CHIP	1K	5%	1/16W
R259	1-216-821-11	METAL CHIP	1K	5%	1/16W
R260	1-216-817-11	METAL CHIP	470	5%	1/16W
R261	1-216-821-11	METAL CHIP	1K	5%	1/16W
R262	1-218-672-11	METAL CHIP	150	0.50%	1/16W
R263	1-218-672-11	METAL CHIP	150	0.50%	1/16W
R264	1-216-817-11	METAL CHIP	470	5%	1/16W
R265	1-216-816-11	METAL CHIP	390	5%	1/16W
R266	1-216-821-11	METAL CHIP	1K	5%	1/16W
R267	1-218-672-11	METAL CHIP	150	0.50%	1/16W
R268	1-218-672-11	METAL CHIP	150	0.50%	1/16W
R269	1-216-817-11	METAL CHIP	470	5%	1/16W
R270	1-216-864-11	METAL CHIP	0	5%	1/16W
R272	1-216-821-11	METAL CHIP	1K	5%	1/16W
R273	1-218-672-11	METAL CHIP	150	0.50%	1/16W
R274	1-218-672-11	METAL CHIP	150	0.50%	1/16W
R275	1-216-817-11	METAL CHIP	470	5%	1/16W
R276	1-216-821-11	METAL CHIP	1K	5%	1/16W
R277	1-218-672-11	METAL CHIP	150	0.50%	1/16W
R278	1-218-672-11	METAL CHIP	150	0.50%	1/16W
R279	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R280	1-216-817-11	METAL CHIP	470	5%	1/16W
R281	1-216-821-11	METAL CHIP	1K	5%	1/16W
R282	1-216-864-11	METAL CHIP	0	5%	1/16W
R283	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R284	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R285	1-216-849-11	METAL CHIP	220K	5%	1/16W
R286	1-216-849-11	METAL CHIP	220K	5%	1/16W
R301	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R302	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R303	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R304	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R305	1-216-816-11	METAL CHIP	390	5%	1/16W
R306	1-216-828-11	METAL CHIP	3.9K	5%	1/16W
R307	1-216-828-11	METAL CHIP	3.9K	5%	1/16W
R308	1-216-816-11	METAL CHIP	390	5%	1/16W
R309	1-216-813-11	METAL CHIP	220	5%	1/16W
R310	1-216-813-11	METAL CHIP	220	5%	1/16W
R311	1-216-813-11	METAL CHIP	220	5%	1/16W
R312	1-216-813-11	METAL CHIP	220	5%	1/16W
R313	1-216-827-11	METAL CHIP	3.3K	5%	1/16W

Ref. No.	Part No.	Description			Remarks
R314	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R315	1-216-805-11	METAL CHIP	47	5%	1/16W
R316	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R317	1-218-700-11	METAL CHIP	2.2K	0.50%	1/16W
R318	1-218-700-11	METAL CHIP	2.2K	0.50%	1/16W
R319	1-218-700-11	METAL CHIP	2.2K	0.50%	1/16W
R320	1-218-700-11	METAL CHIP	2.2K	0.50%	1/16W
R321	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R322	1-216-805-11	METAL CHIP	47	5%	1/16W
R323	1-218-700-11	METAL CHIP	2.2K	0.50%	1/16W
R324	1-218-848-11	METAL CHIP	1.1K	0.50%	1/16W
R325	1-218-848-11	METAL CHIP	1.1K	0.50%	1/16W
R326	1-218-848-11	METAL CHIP	1.1K	0.50%	1/16W
R327	1-216-813-11	METAL CHIP	220	5%	1/16W
R328	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R329	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R330	1-216-805-11	METAL CHIP	47	5%	1/16W
R331	1-216-864-11	METAL CHIP	0	5%	1/16W
R332	1-216-864-11	METAL CHIP	0	5%	1/16W
R333	1-216-864-11	METAL CHIP	0	5%	1/16W
R334	1-216-864-11	METAL CHIP	0	5%	1/16W
R335	1-216-864-11	METAL CHIP	0	5%	1/16W
R336	1-216-864-11	METAL CHIP	0	5%	1/16W
R337	1-216-864-11	METAL CHIP	0	5%	1/16W
R338	1-216-864-11	METAL CHIP	0	5%	1/16W
R401	1-218-840-11	METAL CHIP	510	0.50%	1/16W
R402	1-218-840-11	METAL CHIP	510	0.50%	1/16W
R403	1-218-840-11	METAL CHIP	510	0.50%	1/16W
R404	1-218-840-11	METAL CHIP	510	0.50%	1/16W
R405	1-216-826-11	METAL CHIP	2.7K	5%	1/16W
R406	1-216-826-11	METAL CHIP	2.7K	5%	1/16W
R407	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R408	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R409	1-218-840-11	METAL CHIP	510	0.50%	1/16W
R410	1-218-840-11	METAL CHIP	510	0.50%	1/16W
R411	1-216-817-11	METAL CHIP	470	5%	1/16W
R412	1-218-840-11	METAL CHIP	510	0.50%	1/16W
R413	1-218-840-11	METAL CHIP	510	0.50%	1/16W
R414	1-216-821-11	METAL CHIP	1K	5%	1/16W
R415	1-216-821-11	METAL CHIP	1K	5%	1/16W
R416	1-216-821-11	METAL CHIP	1K	5%	1/16W
R417	1-216-821-11	METAL CHIP	1K	5%	1/16W
R418	1-216-821-11	METAL CHIP	1K	5%	1/16W
R419	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R420	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R421	1-216-833-11	METAL CHIP	10K	5%	1/16W
R422	1-216-833-11	METAL CHIP	10K	5%	1/16W
R423	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R424	1-216-833-11	METAL CHIP	10K	5%	1/16W
R425	1-218-840-11	METAL CHIP	510	0.50%	1/16W

Ref. No.	Part No.	Description			Remarks
R426	1-216-817-11	METAL CHIP	470	5%	1/16W
R427	1-216-817-11	METAL CHIP	470	5%	1/16W
R428	1-216-817-11	METAL CHIP	470	5%	1/16W
R429	1-216-821-11	METAL CHIP	1K	5%	1/16W
R430	1-216-821-11	METAL CHIP	1K	5%	1/16W
R431	1-216-821-11	METAL CHIP	1K	5%	1/16W
R432	1-216-821-11	METAL CHIP	1K	5%	1/16W
R433	1-216-817-11	METAL CHIP	470	5%	1/16W
R434	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R435	1-216-833-11	METAL CHIP	10K	5%	1/16W
R436	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R437	1-216-833-11	METAL CHIP	10K	5%	1/16W
R438	1-216-817-11	METAL CHIP	470	5%	1/16W
R439	1-216-821-11	METAL CHIP	1K	5%	1/16W
R440	1-216-821-11	METAL CHIP	1K	5%	1/16W
R443	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R444	1-216-833-11	METAL CHIP	10K	5%	1/16W
R445	1-216-817-11	METAL CHIP	470	5%	1/16W
R446	1-216-821-11	METAL CHIP	1K	5%	1/16W
R451	1-218-720-11	METAL CHIP	15K	0.50%	1/16W
R452	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R453	1-216-839-11	METAL CHIP	33K	5%	1/16W
R454	1-216-839-11	METAL CHIP	33K	5%	1/16W
R455	1-216-839-11	METAL CHIP	33K	5%	1/16W
R456	1-216-839-11	METAL CHIP	33K	5%	1/16W
R457	1-216-839-11	METAL CHIP	33K	5%	1/16W
R458	1-216-833-11	METAL CHIP	10K	5%	1/16W
R459	1-216-821-11	METAL CHIP	1K	5%	1/16W
R460	1-216-809-11	METAL CHIP	100	5%	1/16W
R461	1-216-857-11	METAL CHIP	1M	5%	1/16W
R462	1-216-857-11	METAL CHIP	1M	5%	1/16W
R463	1-216-857-11	METAL CHIP	1M	5%	1/16W
R465	1-216-864-11	METAL CHIP	0	5%	1/16W
R467	1-216-864-11	METAL CHIP	0	5%	1/16W
R471	1-216-833-11	METAL CHIP	10K	5%	1/16W
R472	1-216-833-11	METAL CHIP	10K	5%	1/16W
R473	1-216-864-11	METAL CHIP	0	5%	1/16W
R474	1-218-851-11	METAL CHIP	1.5K	0.50%	1/16W
R475	1-216-809-11	METAL CHIP	100	5%	1/16W
R476	1-218-851-11	METAL CHIP	1.5K	0.50%	1/16W
R477	1-216-809-11	METAL CHIP	100	5%	1/16W
R478	1-216-833-11	METAL CHIP	10K	5%	1/16W
R479	1-216-864-11	METAL CHIP	0	5%	1/16W
R481	1-216-821-11	METAL CHIP	1K	5%	1/16W
R482	1-216-817-11	METAL CHIP	470	5%	1/16W
R484	1-216-841-11	METAL CHIP	47K	5%	1/16W
R486	1-216-864-11	METAL CHIP	0	5%	1/16W
R487	1-216-864-11	METAL CHIP	0	5%	1/16W
R488	1-218-720-11	METAL CHIP	15K	0.50%	1/16W
R491	1-216-841-11	METAL CHIP	47K	5%	1/16W

DV-19

Ref. No.	Part No.	Description			Remarks
R492	1-216-841-11	METAL CHIP	47K	5%	1/16W
R493	1-216-841-11	METAL CHIP	47K	5%	1/16W
R497	1-216-864-11	METAL CHIP	0	5%	1/16W
R499	1-216-864-11	METAL CHIP	0	5%	1/16W
R501	1-216-839-11	METAL CHIP	33K	5%	1/16W
R502	1-216-833-11	METAL CHIP	10K	5%	1/16W
R503	1-216-833-11	METAL CHIP	10K	5%	1/16W
R504	1-216-839-11	METAL CHIP	33K	5%	1/16W
R505	1-216-821-11	METAL CHIP	1K	5%	1/16W
R506	1-216-839-11	METAL CHIP	33K	5%	1/16W
R507	1-216-857-11	METAL CHIP	1M	5%	1/16W
R508	1-218-692-11	METAL CHIP	1K	0.50%	1/16W
R509	1-218-692-11	METAL CHIP	1K	0.50%	1/16W
R510	1-216-839-11	METAL CHIP	33K	5%	1/16W
R511	1-216-839-11	METAL CHIP	33K	5%	1/16W
R512	1-216-821-11	METAL CHIP	1K	5%	1/16W
R513	1-216-821-11	METAL CHIP	1K	5%	1/16W
R514	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R515	1-216-809-11	METAL CHIP	100	5%	1/16W
R516	1-216-809-11	METAL CHIP	100	5%	1/16W
R517	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R518	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R519	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R520	1-216-864-11	METAL CHIP	0	5%	1/16W
R521	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R522	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R523	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R525	1-216-864-11	METAL CHIP	0	5%	1/16W
R527	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R528	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R529	1-216-821-11	METAL CHIP	1K	5%	1/16W
R530	1-216-821-11	METAL CHIP	1K	5%	1/16W
R531	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R532	1-216-839-11	METAL CHIP	33K	5%	1/16W
R533	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R534	1-216-833-11	METAL CHIP	10K	5%	1/16W
R535	1-216-833-11	METAL CHIP	10K	5%	1/16W
R536	1-216-821-11	METAL CHIP	1K	5%	1/16W
R537	1-216-821-11	METAL CHIP	1K	5%	1/16W
R538	1-216-833-11	METAL CHIP	10K	5%	1/16W
R539	1-216-833-11	METAL CHIP	10K	5%	1/16W
R540	1-216-839-11	METAL CHIP	33K	5%	1/16W
R541	1-216-839-11	METAL CHIP	33K	5%	1/16W
R542	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R543	1-216-864-11	METAL CHIP	0	5%	1/16W
R545	1-216-864-11	METAL CHIP	0	5%	1/16W
R547	1-216-864-11	METAL CHIP	0	5%	1/16W
R549	1-216-864-11	METAL CHIP	0	5%	1/16W
R551	1-216-864-11	METAL CHIP	0	5%	1/16W
R553	1-218-699-11	METAL CHIP	2K	0.50%	1/16W
R554	1-218-699-11	METAL CHIP	2K	0.50%	1/16W
R555	1-216-821-11	METAL CHIP	1K	5%	1/16W

Ref. No.	Part No.	Description			Remarks
R556	1-216-821-11	METAL CHIP	1K	5%	1/16W
R557	1-216-833-11	METAL CHIP	10K	5%	1/16W
R558	1-216-833-11	METAL CHIP	10K	5%	1/16W
R559	1-216-809-11	METAL CHIP	100	5%	1/16W
R560	1-216-809-11	METAL CHIP	100	5%	1/16W
R561	1-216-833-11	METAL CHIP	10K	5%	1/16W
R562	1-216-833-11	METAL CHIP	10K	5%	1/16W
R563	1-216-833-11	METAL CHIP	10K	5%	1/16W
R564	1-216-833-11	METAL CHIP	10K	5%	1/16W
R565	1-216-833-11	METAL CHIP	10K	5%	1/16W
R566	1-216-833-11	METAL CHIP	10K	5%	1/16W
R567	1-216-833-11	METAL CHIP	10K	5%	1/16W
R568	1-216-833-11	METAL CHIP	10K	5%	1/16W
R570	1-216-838-11	METAL CHIP	27K	5%	1/16W
R571	1-216-833-11	METAL CHIP	10K	5%	1/16W
R572	1-216-833-11	METAL CHIP	10K	5%	1/16W
R573	1-218-699-11	METAL CHIP	2K	0.50%	1/16W
R574	1-218-699-11	METAL CHIP	2K	0.50%	1/16W
R575	1-216-833-11	METAL CHIP	10K	5%	1/16W
R576	1-216-864-11	METAL CHIP	0	5%	1/16W
R578	1-216-809-11	METAL CHIP	100	5%	1/16W
R580	1-216-809-11	METAL CHIP	100	5%	1/16W
R581	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R582	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R583	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R584	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R585	1-216-833-11	METAL CHIP	10K	5%	1/16W
R586	1-216-833-11	METAL CHIP	10K	5%	1/16W
R587	1-216-833-11	METAL CHIP	10K	5%	1/16W
R588	1-218-692-11	METAL CHIP	1K	0.50%	1/16W
R589	1-218-692-11	METAL CHIP	1K	0.50%	1/16W
R590	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R591	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R592	1-218-851-11	METAL CHIP	1.5K	0.50%	1/16W
R593	1-218-851-11	METAL CHIP	1.5K	0.50%	1/16W
R594	1-216-833-11	METAL CHIP	10K	5%	1/16W
R595	1-216-833-11	METAL CHIP	10K	5%	1/16W
R596	1-216-837-11	METAL CHIP	22K	5%	1/16W
R597	1-216-821-11	METAL CHIP	1K	5%	1/16W
R598	1-216-837-11	METAL CHIP	22K	5%	1/16W
R599	1-216-821-11	METAL CHIP	1K	5%	1/16W
R600	1-216-835-11	METAL CHIP	15K	5%	1/16W
R601	1-216-817-11	METAL CHIP	470	5%	1/16W
R602	1-216-817-11	METAL CHIP	470	5%	1/16W
R603	1-216-833-11	METAL CHIP	10K	5%	1/16W
R605	1-216-821-11	METAL CHIP	1K	5%	1/16W
R606	1-216-821-11	METAL CHIP	1K	5%	1/16W
R607	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R608	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R610	1-216-833-11	METAL CHIP	10K	5%	1/16W

Ref. No.	Part No.	Description			Remarks
R611	1-216-833-11	METAL CHIP	10K	5%	1/16W
R612	1-216-833-11	METAL CHIP	10K	5%	1/16W
R613	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R614	1-216-817-11	METAL CHIP	470	5%	1/16W
R615	1-216-817-11	METAL CHIP	470	5%	1/16W
R616	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R617	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R618	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R619	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R620	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R621	1-216-841-11	METAL CHIP	47K	5%	1/16W
R622	1-216-841-11	METAL CHIP	47K	5%	1/16W
R623	1-216-845-11	METAL CHIP	100K	5%	1/16W
R624	1-216-845-11	METAL CHIP	100K	5%	1/16W
R625	1-216-817-11	METAL CHIP	470	5%	1/16W
R626	1-216-817-11	METAL CHIP	470	5%	1/16W
R627	1-216-821-11	METAL CHIP	1K	5%	1/16W
R628	1-216-821-11	METAL CHIP	1K	5%	1/16W
R629	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R630	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R631	1-218-840-11	METAL CHIP	510	0.50%	1/16W
R632	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R633	1-218-840-11	METAL CHIP	510	0.50%	1/16W
R634	1-218-840-11	METAL CHIP	510	0.50%	1/16W
R635	1-218-845-11	METAL CHIP	820	0.50%	1/16W
R636	1-218-840-11	METAL CHIP	510	0.50%	1/16W
R637	1-218-845-11	METAL CHIP	820	0.50%	1/16W
R638	1-216-821-11	METAL CHIP	1K	5%	1/16W
R639	1-216-833-11	METAL CHIP	10K	5%	1/16W
R640	1-216-821-11	METAL CHIP	1K	5%	1/16W
R641	1-216-833-11	METAL CHIP	10K	5%	1/16W
R642	1-218-692-11	METAL CHIP	1K	0.50%	1/16W
R643	1-218-706-11	METAL CHIP	3.9K	0.50%	1/16W
R644	1-218-706-11	METAL CHIP	3.9K	0.50%	1/16W
R645	1-218-697-11	METAL CHIP	1.6K	0.50%	1/16W
R646	1-216-817-11	METAL CHIP	470	5%	1/16W
R647	1-218-697-11	METAL CHIP	1.6K	0.50%	1/16W
R648	1-216-817-11	METAL CHIP	470	5%	1/16W
R649	1-218-840-11	METAL CHIP	510	0.50%	1/16W
R650	1-218-692-11	METAL CHIP	1K	0.50%	1/16W
R651	1-218-692-11	METAL CHIP	1K	0.50%	1/16W
R652	1-218-692-11	METAL CHIP	1K	0.50%	1/16W
R653	1-218-692-11	METAL CHIP	1K	0.50%	1/16W
R654	1-218-692-11	METAL CHIP	1K	0.50%	1/16W
R655	1-218-840-11	METAL CHIP	510	0.50%	1/16W
R656	1-218-692-11	METAL CHIP	1K	0.50%	1/16W
R657	1-218-692-11	METAL CHIP	1K	0.50%	1/16W
R658	1-216-833-11	METAL CHIP	10K	5%	1/16W
R659	1-216-833-11	METAL CHIP	10K	5%	1/16W
R660	1-218-845-11	METAL CHIP	820	0.50%	1/16W

Ref. No.	Part No.	Description			Remarks
R661	1-216-817-11	METAL CHIP	470	5%	1/16W
R662	1-218-692-11	METAL CHIP	1K	0.50%	1/16W
R663	1-218-692-11	METAL CHIP	1K	0.50%	1/16W
R664	1-218-692-11	METAL CHIP	1K	0.50%	1/16W
R665	1-218-692-11	METAL CHIP	1K	0.50%	1/16W
R666	1-218-845-11	METAL CHIP	820	0.50%	1/16W
R667	1-216-817-11	METAL CHIP	470	5%	1/16W
R668	1-216-817-11	METAL CHIP	470	5%	1/16W
R669	1-216-817-11	METAL CHIP	470	5%	1/16W
R670	1-218-692-11	METAL CHIP	1K	0.50%	1/16W
R671	1-218-724-11	METAL CHIP	22K	0.50%	1/16W
R672	1-218-692-11	METAL CHIP	1K	0.50%	1/16W
R673	1-218-724-11	METAL CHIP	22K	0.50%	1/16W
R674	1-216-849-11	METAL CHIP	220K	5%	1/16W
R675	1-216-849-11	METAL CHIP	220K	5%	1/16W
R676	1-218-692-11	METAL CHIP	1K	0.50%	1/16W
R677	1-218-716-11	METAL CHIP	10K	0.50%	1/16W
R678	1-218-692-11	METAL CHIP	1K	0.50%	1/16W
R679	1-218-716-11	METAL CHIP	10K	0.50%	1/16W
R680	1-216-817-11	METAL CHIP	470	5%	1/16W
R681	1-216-817-11	METAL CHIP	470	5%	1/16W
R682	1-218-845-11	METAL CHIP	820	0.50%	1/16W
R683	1-218-845-11	METAL CHIP	820	0.50%	1/16W
R684	1-218-692-11	METAL CHIP	1K	0.50%	1/16W
R685	1-218-724-11	METAL CHIP	22K	0.50%	1/16W
R686	1-218-692-11	METAL CHIP	1K	0.50%	1/16W
R687	1-218-724-11	METAL CHIP	22K	0.50%	1/16W
R688	1-216-817-11	METAL CHIP	470	5%	1/16W
R689	1-216-849-11	METAL CHIP	220K	5%	1/16W
R690	1-216-817-11	METAL CHIP	470	5%	1/16W
R691	1-216-849-11	METAL CHIP	220K	5%	1/16W
R692	1-218-692-11	METAL CHIP	1K	0.50%	1/16W
R693	1-218-716-11	METAL CHIP	10K	0.50%	1/16W
R694	1-218-692-11	METAL CHIP	1K	0.50%	1/16W
R695	1-218-716-11	METAL CHIP	10K	0.50%	1/16W
R696	1-218-692-11	METAL CHIP	1K	0.50%	1/16W
R697	1-216-821-11	METAL CHIP	1K	5%	1/16W
R698	1-216-821-11	METAL CHIP	1K	5%	1/16W
R699	1-218-692-11	METAL CHIP	1K	0.50%	1/16W
R701	1-216-833-11	METAL CHIP	10K	5%	1/16W
R702	1-216-841-11	METAL CHIP	47K	5%	1/16W
R703	1-216-841-11	METAL CHIP	47K	5%	1/16W
R704	1-216-841-11	METAL CHIP	47K	5%	1/16W
R705	1-216-841-11	METAL CHIP	47K	5%	1/16W
R706	1-216-841-11	METAL CHIP	47K	5%	1/16W
R707	1-216-841-11	METAL CHIP	47K	5%	1/16W
R708	1-216-841-11	METAL CHIP	47K	5%	1/16W
R709	1-216-841-11	METAL CHIP	47K	5%	1/16W
R710	1-216-841-11	METAL CHIP	47K	5%	1/16W
R711	1-216-841-11	METAL CHIP	47K	5%	1/16W

Ref. No.	Part No.	Description			Remarks
R712	1-216-841-11	METAL CHIP	47K	5%	1/16W
R713	1-216-833-11	METAL CHIP	10K	5%	1/16W
R714	1-216-833-11	METAL CHIP	10K	5%	1/16W
R715	1-216-833-11	METAL CHIP	10K	5%	1/16W
R716	1-216-841-11	METAL CHIP	47K	5%	1/16W
R717	1-216-864-11	METAL CHIP	0	5%	1/16W
R725	1-216-833-11	METAL CHIP	10K	5%	1/16W
R726	1-216-833-11	METAL CHIP	10K	5%	1/16W
R732	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R733	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R735	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R736	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R737	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R739	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R740	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R741	1-216-833-11	METAL CHIP	10K	5%	1/16W
R743	1-216-841-11	METAL CHIP	47K	5%	1/16W
R751	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R752	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R753	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R754	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R755	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R756	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R757	1-216-864-11	METAL CHIP	0	5%	1/16W
R762	1-216-833-11	METAL CHIP	10K	5%	1/16W
R763	1-216-833-11	METAL CHIP	10K	5%	1/16W
R768	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R769	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R801	1-216-821-11	METAL CHIP	1K	5%	1/16W
R802	1-218-851-11	METAL CHIP	1.5K	0.50%	1/16W
R803	1-218-692-11	METAL CHIP	1K	0.50%	1/16W
R804	1-216-821-11	METAL CHIP	1K	5%	1/16W
R805	1-216-821-11	METAL CHIP	1K	5%	1/16W
R806	1-218-692-11	METAL CHIP	1K	0.50%	1/16W
R807	1-218-706-11	METAL CHIP	3.9K	0.50%	1/16W
R808	1-218-706-11	METAL CHIP	3.9K	0.50%	1/16W
R809	1-218-706-11	METAL CHIP	3.9K	0.50%	1/16W
R810	1-218-692-11	METAL CHIP	1K	0.50%	1/16W
R811	1-218-692-11	METAL CHIP	1K	0.50%	1/16W
R812	1-218-692-11	METAL CHIP	1K	0.50%	1/16W
R813	1-218-692-11	METAL CHIP	1K	0.50%	1/16W
R814	1-216-817-11	METAL CHIP	470	5%	1/16W
R815	1-218-845-11	METAL CHIP	820	0.50%	1/16W
R816	1-218-845-11	METAL CHIP	820	0.50%	1/16W
R817	1-218-692-11	METAL CHIP	1K	0.50%	1/16W
R818	1-216-821-11	METAL CHIP	1K	5%	1/16W
R819	1-218-692-11	METAL CHIP	1K	0.50%	1/16W
R820	1-218-692-11	METAL CHIP	1K	0.50%	1/16W
R821	1-218-692-11	METAL CHIP	1K	0.50%	1/16W
R822	1-218-692-11	METAL CHIP	1K	0.50%	1/16W

Ref. No.	Part No.	Description			Remarks
R823	1-218-716-11	METAL CHIP	10K	0.50%	1/16W
R824	1-218-716-11	METAL CHIP	10K	0.50%	1/16W
R825	1-218-692-11	METAL CHIP	1K	0.50%	1/16W
R826	1-218-697-11	METAL CHIP	1.6K	0.50%	1/16W
R827	1-218-697-11	METAL CHIP	1.6K	0.50%	1/16W
R828	1-218-692-11	METAL CHIP	1K	0.50%	1/16W
R829	1-216-821-11	METAL CHIP	1K	5%	1/16W
R830	1-216-821-11	METAL CHIP	1K	5%	1/16W
R831	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R832	1-216-817-11	METAL CHIP	470	5%	1/16W
R833	1-216-817-11	METAL CHIP	470	5%	1/16W
R834	1-218-692-11	METAL CHIP	1K	0.50%	1/16W
R835	1-216-817-11	METAL CHIP	470	5%	1/16W
R836	1-216-817-11	METAL CHIP	470	5%	1/16W
R837	1-216-833-11	METAL CHIP	10K	5%	1/16W
R838	1-216-817-11	METAL CHIP	470	5%	1/16W
R839	1-216-821-11	METAL CHIP	1K	5%	1/16W
R840	1-216-821-11	METAL CHIP	1K	5%	1/16W
R841	1-216-817-11	METAL CHIP	470	5%	1/16W
R842	1-216-821-11	METAL CHIP	1K	5%	1/16W
R843	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R844	1-216-849-11	METAL CHIP	220K	5%	1/16W
R845	1-216-841-11	METAL CHIP	47K	5%	1/16W
R846	1-216-817-11	METAL CHIP	470	5%	1/16W
R847	1-218-851-11	METAL CHIP	1.5K	0.50%	1/16W
R848	1-218-692-11	METAL CHIP	1K	0.50%	1/16W
R849	1-218-692-11	METAL CHIP	1K	0.50%	1/16W
R850	1-218-692-11	METAL CHIP	1K	0.50%	1/16W
R851	1-216-833-11	METAL CHIP	10K	5%	1/16W
R852	1-218-697-11	METAL CHIP	1.6K	0.50%	1/16W
R853	1-218-697-11	METAL CHIP	1.6K	0.50%	1/16W
R854	1-218-699-11	METAL CHIP	2K	0.50%	1/16W
R855	1-218-706-11	METAL CHIP	3.9K	0.50%	1/16W
R856	1-216-821-11	METAL CHIP	1K	5%	1/16W
R857	1-218-692-11	METAL CHIP	1K	0.50%	1/16W
R858	1-218-706-11	METAL CHIP	3.9K	0.50%	1/16W
R859	1-218-697-11	METAL CHIP	1.6K	0.50%	1/16W
R860	1-218-697-11	METAL CHIP	1.6K	0.50%	1/16W
R861	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R862	1-216-817-11	METAL CHIP	470	5%	1/16W
R863	1-216-833-11	METAL CHIP	10K	5%	1/16W
R864	1-216-821-11	METAL CHIP	1K	5%	1/16W
R865	1-216-821-11	METAL CHIP	1K	5%	1/16W
R866	1-216-864-11	METAL CHIP	0	5%	1/16W
R867	1-216-819-11	METAL CHIP	680	5%	1/16W
R868	1-218-692-11	METAL CHIP	1K	0.50%	1/16W
R869	1-216-833-11	METAL CHIP	10K	5%	1/16W
R870	1-218-845-11	METAL CHIP	820	0.50%	1/16W
R871	1-218-692-11	METAL CHIP	1K	0.50%	1/16W
R872	1-218-692-11	METAL CHIP	1K	0.50%	1/16W

Ref. No.	Part No.	Description			Remarks
R873	1-218-692-11	METAL CHIP	1K	0.50%	1/16W
R874	1-218-692-11	METAL CHIP	1K	0.50%	1/16W
R875	1-218-845-11	METAL CHIP	820	0.50%	1/16W
R876	1-218-692-11	METAL CHIP	1K	0.50%	1/16W
R877	1-216-817-11	METAL CHIP	470	5%	1/16W
R878	1-218-851-11	METAL CHIP	1.5K	0.50%	1/16W
R879	1-218-692-11	METAL CHIP	1K	0.50%	1/16W
R880	1-216-817-11	METAL CHIP	470	5%	1/16W
R881	1-218-692-11	METAL CHIP	1K	0.50%	1/16W
R882	1-216-817-11	METAL CHIP	470	5%	1/16W
R883	1-216-821-11	METAL CHIP	1K	5%	1/16W
R884	1-218-692-11	METAL CHIP	1K	0.50%	1/16W
R885	1-218-692-11	METAL CHIP	1K	0.50%	1/16W
R886	1-216-819-11	METAL CHIP	680	5%	1/16W
R887	1-218-692-11	METAL CHIP	1K	0.50%	1/16W
R888	1-216-821-11	METAL CHIP	1K	5%	1/16W
R889	1-216-821-11	METAL CHIP	1K	5%	1/16W
R890	1-216-816-11	METAL CHIP	390	5%	1/16W
R891	1-218-716-11	METAL CHIP	10K	0.50%	1/16W
R892	1-216-833-11	METAL CHIP	10K	5%	1/16W
R893	1-216-817-11	METAL CHIP	470	5%	1/16W
R894	1-218-692-11	METAL CHIP	1K	0.50%	1/16W
R895	1-216-817-11	METAL CHIP	470	5%	1/16W
R896	1-216-821-11	METAL CHIP	1K	5%	1/16W
R897	1-218-845-11	METAL CHIP	820	0.50%	1/16W
R898	1-216-817-11	METAL CHIP	470	5%	1/16W
R899	1-218-692-11	METAL CHIP	1K	0.50%	1/16W
R901	1-218-692-11	METAL CHIP	1K	0.50%	1/16W
R902	1-216-817-11	METAL CHIP	470	5%	1/16W
R903	1-218-692-11	METAL CHIP	1K	0.50%	1/16W
R904	1-216-803-11	METAL CHIP	33	5%	1/16W
R905	1-218-692-11	METAL CHIP	1K	0.50%	1/16W
R906	1-216-816-11	METAL CHIP	390	5%	1/16W
R907	1-218-716-11	METAL CHIP	10K	0.50%	1/16W
R908	1-218-845-11	METAL CHIP	820	0.50%	1/16W
R909	1-216-817-11	METAL CHIP	470	5%	1/16W
R910	1-216-821-11	METAL CHIP	1K	5%	1/16W
R911	1-216-821-11	METAL CHIP	1K	5%	1/16W
R912	1-216-821-11	METAL CHIP	1K	5%	1/16W
R913	1-218-672-11	METAL CHIP	150	0.50%	1/16W
R914	1-218-672-11	METAL CHIP	150	0.50%	1/16W
R915	1-218-672-11	METAL CHIP	150	0.50%	1/16W
R916	1-218-672-11	METAL CHIP	150	0.50%	1/16W
R917	1-218-672-11	METAL CHIP	150	0.50%	1/16W
R918	1-218-672-11	METAL CHIP	150	0.50%	1/16W
R919	1-218-672-11	METAL CHIP	150	0.50%	1/16W
R920	1-218-672-11	METAL CHIP	150	0.50%	1/16W
R921	1-218-672-11	METAL CHIP	150	0.50%	1/16W
R922	1-218-672-11	METAL CHIP	150	0.50%	1/16W
R923	1-218-672-11	METAL CHIP	150	0.50%	1/16W

Ref. No.	Part No.	Description			Remarks
R924	1-218-672-11	METAL CHIP	150	0.50%	1/16W
R925	1-218-672-11	METAL CHIP	150	0.50%	1/16W
R926	1-218-672-11	METAL CHIP	150	0.50%	1/16W
R927	1-216-821-11	METAL CHIP	1K	5%	1/16W
R928	1-218-692-11	METAL CHIP	1K	0.50%	1/16W
R929	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R930	1-216-809-11	METAL CHIP	100	5%	1/16W
R931	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R932	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R933	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R934	1-216-809-11	METAL CHIP	100	5%	1/16W
R935	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R936	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R938	1-216-864-11	METAL CHIP	0	5%	1/16W
R939	1-216-864-11	METAL CHIP	0	5%	1/16W
R941	1-216-864-11	METAL CHIP	0	5%	1/16W
R942	1-218-716-11	METAL CHIP	10K	0.50%	1/16W
R943	1-218-710-11	METAL CHIP	5.6K	0.50%	1/16W
R944	1-218-692-11	METAL CHIP	1K	0.50%	1/16W
R950	1-218-717-11	METAL CHIP	11K		1/16W
R951	1-216-839-11	METAL CHIP	33K		1/16W
R954	1-216-833-11	METAL CHIP	10K	5%	1/16W
R955	1-216-833-11	METAL CHIP	10K	5%	1/16W
R956	1-216-833-11	METAL CHIP	10K	5%	1/16W
R957	1-216-864-11	METAL CHIP	0	5%	1/16W
R958	1-216-833-11	METAL CHIP	10K	5%	1/16W
R960	1-216-864-11	METAL CHIP	0	5%	1/16W
R961	1-216-833-11	METAL CHIP	10K	5%	1/16W
R962	1-216-833-11	METAL CHIP	10K	5%	1/16W
R963	1-216-833-11	METAL CHIP	10K	5%	1/16W
R964	1-216-833-11	METAL CHIP	10K	5%	1/16W
R965	1-216-813-11	METAL CHIP	220	5%	1/16W
R966	1-216-817-11	METAL CHIP	470	5%	1/16W
R967	1-216-817-11	METAL CHIP	470	5%	1/16W
R968	1-216-821-11	METAL CHIP	1K	5%	1/16W
R969	1-218-692-11	METAL CHIP	1K	0.50%	1/16W
R970	1-216-821-11	METAL CHIP	1K	5%	1/16W
R971	1-218-692-11	METAL CHIP	1K	0.50%	1/16W
R972	1-216-823-11	METAL CHIP	1.5K	5%	1/16W
R973	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R974	1-216-821-11	METAL CHIP	1K	5%	1/16W
R975	1-218-692-11	METAL CHIP	1K	0.50%	1/16W
R976	1-218-692-11	METAL CHIP	1K	0.50%	1/16W
R977	1-216-817-11	METAL CHIP	470	5%	1/16W
R978	1-216-817-11	METAL CHIP	470	5%	1/16W
R979	1-216-813-11	METAL CHIP	220	5%	1/16W
R980	1-216-822-11	METAL CHIP	1.2K	5%	1/16W
R981	1-216-822-11	METAL CHIP	1.2K	5%	1/16W
R982	1-216-823-11	METAL CHIP	1.5K	5%	1/16W
R983	1-216-827-11	METAL CHIP	3.3K	5%	1/16W

Ref. No.	Part No.	Description			Remarks
R984	1-216-821-11	METAL CHIP	1K	5%	1/16W
R986	1-216-864-11	METAL CHIP	0	5%	1/16W
R988	1-216-864-11	METAL CHIP	0	5%	1/16W
R995	1-216-864-11	METAL CHIP	0	5%	1/16W
		< VIBRATOR >			
X201	1-579-780-21	VIBRATOR, CRYSTAL			
X501	1-760-193-11	VIBRATOR, CRYSTAL 14.1875 MHz			
X502	1-579-780-21	VIBRATOR, CRYSTAL 17.734 MHz			
X503	1-577-101-11	VIBRATOR, CERAMIC			
X504	1-579-780-21	VIBRATOR, CRYSTAL 17.734 MHz			
X505	1-579-070-41	VIBRATOR, CRYSTAL 16 MHz			
**********					
*	A-7066-122-A	ED-41 BOARD, COMPLETE			
		**********			
		(Ref. No. 2,000 Seriese)			
		< CONNECTOR >			
CN260	1-565-388-21	CONNECTOR, D-SUB 9P (ENL IN/OUT)			
		< DIODE >			
D851	8-719-107-15	DIODE RD18M-B2			
D852	8-719-107-15	DIODE RD18M-B2			
D853	8-719-107-15	DIODE RD18M-B2			
D854	8-719-107-15	DIODE RD18M-B2			
D855	8-719-107-15	DIODE RD18M-B2			
D856	8-719-107-15	DIODE RD18M-B2			
D857	8-719-107-15	DIODE RD18M-B2			
D858	8-719-107-15	DIODE RD18M-B2			
D859	8-719-107-15	DIODE RD18M-B2			
D860	8-719-107-15	DIODE RD18M-B2			
D861	8-719-107-15	DIODE RD18M-B2			
D862	8-719-107-15	DIODE RD18M-B2			
D863	8-719-107-15	DIODE RD18M-B2			
D864	8-719-107-15	DIODE RD18M-B2			
		< FERRITE BEAD >			
FB260	1-543-775-11	FILTER, EMI			
FB261	1-543-775-11	FILTER, EMI			
FB262	1-543-775-11	FILTER, EMI			
FB263	1-543-775-11	FILTER, EMI			
FB264	1-543-775-11	FILTER, EMI			
FB265	1-543-775-11	FILTER, EMI			
FB266	1-543-775-11	FILTER, EMI			
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Ref. No.	Part No.	Description			Remarks
*	A-7066-120-A	FU-123 BOARD, COMPLETE			
		**********			
		(Ref. No. 3,000 Seriese)			
		< CAPACITOR >			
C601	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C602	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C603	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C604	1-126-603-11	ELECT CHIP	4.7uF	20%	35V
C605	1-124-779-00	ELECT CHIP	10uF	20%	16V
C606	1-126-103-11	ELECT	470uF	20%	16V
		< CONNECTOR >			
* CN601	1-560-893-00	PIN, CONNECTOR 5P			
* CN602	1-560-896-00	PIN, CONNECTOR 8P			
CN603	1-506-473-11	PIN, CONNECTOR 8P			
CN604	1-506-468-11	PIN, CONNECTOR 3P			
* CN605	1-564-007-11	PIN, CONNECTOR 8P			
CN606	1-506-471-11	PIN, CONNECTOR 6P			
CN607	1-506-471-11	PIN, CONNECTOR 6P			
CN608	1-506-471-11	PIN, CONNECTOR 6P			
CN609	1-506-469-11	PIN, CONNECTOR 4P			
		< IC >			
IC601	8-759-604-39	IC AN6291 (+12V REG)			
		< COIL >			
L601	1-410-678-31	INDUCTOR 220uH			
L602	1-410-678-31	INDUCTOR 220uH			
		< IC LINK >			
⚠PS601	1-532-685-21	LINK, IC			
⚠PS602	1-532-685-21	LINK, IC			
⚠PS603	1-532-727-11	LINK, IC 0.25A			
⚠PS604	1-532-605-21	LINK, IC			
⚠PS605	1-532-675-00	LINK, IC 1.5A			
⚠PS606	1-532-675-00	LINK, IC 1.5A			
⚠PS607	1-532-637-21	LINK, IC			
⚠PS608	1-532-605-21	LINK, IC			
⚠PS609	1-532-675-00	LINK, IC 1.5A			
⚠PS610	1-532-675-00	LINK, IC 1.5A			
⚠PS611	1-532-675-00	LINK, IC 1.5A			
⚠PS612	1-532-675-00	LINK, IC 1.5A			
⚠PS613	1-532-675-00	LINK, IC 1.5A			
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Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Ref. No.	Part No.	Description	Remarks
*	A-7066-118-A	JS-25 BOARD, COMPLETE	
		**********	
			(Ref. No. 3,000 Seriese)
	1-751-567-11	CABLE, FLAT (FJS-1)	
	3-956-977-01	STICK, JOY	
*	3-956-995-01	COVER, STICK	
*	3-957-732-01	HOLDER, JS LED	
		< CAPACITOR >	
C701	1-163-031-11	CERAMIC CHIP 0.01uF	50V
C702	1-163-031-11	CERAMIC CHIP 0.01uF	50V
C703	1-163-031-11	CERAMIC CHIP 0.01uF	50V
C704	1-163-031-11	CERAMIC CHIP 0.01uF	50V
C705	1-163-031-11	CERAMIC CHIP 0.01uF	50V
C706	1-163-031-11	CERAMIC CHIP 0.01uF	50V
C707	1-163-031-11	CERAMIC CHIP 0.01uF	50V
C708	1-163-031-11	CERAMIC CHIP 0.01uF	50V
C801	1-163-031-11	CERAMIC CHIP 0.01uF	50V
C802	1-163-031-11	CERAMIC CHIP 0.01uF	50V
C803	1-163-031-11	CERAMIC CHIP 0.01uF	50V
C804	1-163-031-11	CERAMIC CHIP 0.01uF	50V
C805	1-163-031-11	CERAMIC CHIP 0.01uF	50V
C806	1-163-031-11	CERAMIC CHIP 0.01uF	50V
C807	1-163-031-11	CERAMIC CHIP 0.01uF	50V
C808	1-163-031-11	CERAMIC CHIP 0.01uF	50V
C809	1-163-031-11	CERAMIC CHIP 0.01uF	50V
		< CONNECTOR >	
* CN801	1-569-035-11	CONNECTOR, FPC (ZIF) 30P	
		< DIODE >	
D801	8-719-800-55	LED TLS123 (SOFT)	
D803	8-719-800-55	LED TLS123 (CHROMAKEY/LUMINA KEY)	
D804	8-719-800-55	LED TLS123 (BORDER)	
D807	8-719-800-55	LED TLS123 (OFF)	
D809	8-719-800-55	LED TLS123 (POSITION)	
D810	8-719-800-55	LED TLS123 (COLOR CORRECTION)	
		< IC >	
IC701	8-759-011-65	IC MC74HC4053F (SWITCHER)	
IC801	8-759-011-65	IC MC74HC4053F (SWITCHER)	
		< SWITCH >	
LS801	1-692-518-11	SWITCH, TACTIL (LS22BB-2SD/SD-T)	(A-BUS)
LS802	1-692-518-11	SWITCH, TACTIL (LS22BB-2SD/SD-T)	(B-BUS)
LS803	1-692-518-11	SWITCH, TACTIL (LS22BB-2SD/SD-T)	(MEMORY RECALL)
LS804	1-692-518-11	SWITCH, TACTIL (LS22BB-2SD/SD-T)	(ON/OFF)

Ref. No.	Part No.	Description	Remarks
		< VARIABLE RESISTOR >	
RV701	1-241-010-11	RES, VAR, CARBON 10K (A-BUS HUE)	
RV702	1-241-010-11	RES, VAR, CARBON 10K (A-BUS LUMINANCE)	
RV703	1-241-010-11	RES, VAR, CARBON 10K (A-BUS CHROMINANCE)	
RV704	1-241-010-11	RES, VAR, CARBON 10K (B-BUS HUE)	
RV705	1-241-010-11	RES, VAR, CARBON 10K (B-BUS LUMINANCE)	
RV706	1-241-010-11	RES, VAR, CARBON 10K (B-BUS CHROMINANCE)	
RV801	1-241-010-11	RES, VAR, CARBON 10K (CLIP/CLIP HIGH)	
RV802	1-241-010-11	RES, VAR, CARBON 10K (HUE)	
RV803	1-241-010-11	RES, VAR, CARBON 10K (GAIN/CLIP LOW)	
RV804	1-237-423-21	RES, VAR, CARBON 1K/1K (COLOR CORRECTION)	
RV805	1-237-423-21	RES, VAR, CARBON 1K/1K (POSITION)	
		< SWITCH >	
S801	1-571-787-11	SWITCH, TACTILE (STORE)	
S802	1-571-787-11	SWITCH, TACTILE (PATTERN EDGE)	
S803	1-571-787-11	SWITCH, TACTILE (▼)	
S804	1-571-787-11	SWITCH, TACTILE (▲)	
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*	A-7063-837-A	KS-15 BOARD, COMPLETE	
		**********	
			(Ref. No. 3,000 Seriese)
	3-956-994-01	SHEET, INDICATION (P1)	
	3-956-994-11	SHEET, INDICATION (P2)	
	3-956-994-21	SHEET, INDICATION (AUX)	
	3-956-994-31	SHEET, INDICATION (BKGD)	
		< BUZZER >	
BZ100	1-529-070-11	BUZZER	
		< CAPACITOR >	
C100	1-165-319-11	CERAMIC CHIP 0.1uF	50V
C101	1-165-319-11	CERAMIC CHIP 0.1uF	50V
C102	1-165-319-11	CERAMIC CHIP 0.1uF	50V
C103	1-165-319-11	CERAMIC CHIP 0.1uF	50V
C104	1-165-319-11	CERAMIC CHIP 0.1uF	50V
C105	1-163-235-11	CERAMIC CHIP 22PF 5%	50V
C106	1-163-235-11	CERAMIC CHIP 22PF 5%	50V
C107	1-165-319-11	CERAMIC CHIP 0.1uF	50V
C108	1-165-319-11	CERAMIC CHIP 0.1uF	50V
C109	1-165-319-11	CERAMIC CHIP 0.1uF	50V
C110	1-165-319-11	CERAMIC CHIP 0.1uF	50V
C111	1-165-319-11	CERAMIC CHIP 0.1uF	50V
C112	1-165-319-11	CERAMIC CHIP 0.1uF	50V
C113	1-165-319-11	CERAMIC CHIP 0.1uF	50V
C114	1-165-319-11	CERAMIC CHIP 0.1uF	50V
C115	1-165-319-11	CERAMIC CHIP 0.1uF	50V
C116	1-165-319-11	CERAMIC CHIP 0.1uF	50V
C117	1-124-779-00	ELECT CHIP 10uF 20%	16V
C118	1-165-319-11	CERAMIC CHIP 0.1uF	50V
C119	1-124-779-00	ELECT CHIP 10uF 20%	16V

Ref. No.	Part No.	Description			Remarks
C120	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C121	1-124-779-00	ELECT CHIP	10uF	20%	16V
C122	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C123	1-124-779-00	ELECT CHIP	10uF	20%	16V
C124	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C125	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C126	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C127	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C128	1-124-779-00	ELECT CHIP	10uF	20%	16V
C129	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C130	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C131	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C132	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C133	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C134	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C135	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C136	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C137	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C138	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C139	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C140	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C141	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C142	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C143	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C144	1-126-206-11	ELECT CHIP	100uF	20%	6.3V

< CONNECTOR >

*	CN100	1-569-035-11	CONNECTOR, FPC (ZIF) 30P
	CN101	1-580-723-11	CONNECTOR, BOARD TO BOARD 28P
	CN102	1-580-723-11	CONNECTOR, BOARD TO BOARD 28P
	CN103	1-566-535-11	CONNECTOR, FPC (ZIF) 19P
*	CN104	1-564-013-11	PIN, CONNECTOR 3P
	CN105	1-506-485-11	PIN, CONNECTOR 6P
*	CN106	1-565-211-11	CONNECTOR, FPC (ZIF) 22P

< DIODE >

D100	8-719-104-34	DIODE	1S2836
D101	8-719-104-34	DIODE	1S2836
D102	8-719-104-34	DIODE	1S2836
D103	8-719-104-34	DIODE	1S2836
D104	8-719-104-34	DIODE	1S2836
D105	8-719-104-34	DIODE	1S2836
D106	8-719-104-34	DIODE	1S2836
D107	8-719-104-34	DIODE	1S2836
D108	8-719-029-43	DIODE	CL-140SD-CD-T (9)
D109	8-719-029-43	DIODE	CL-140SD-CD-T (+)
D140	8-719-913-53	LED	LA-301VL (TRANSRATE 8)
D141	8-719-913-53	LED	LA-301VL (TRANSRATE 8)
D142	8-719-913-53	LED	LA-301VL (TRANSRATE 8)
D143	8-719-029-43	DIODE	CL-140SD-CD-T (AUDIO FOLLOW)
D144	8-719-029-43	DIODE	CL-140SD-CD-T (COLOR BACKGROUND)

Ref. No.	Part No.	Description	Remarks
D147	8-719-029-43	DIODE	CL-140SD-CD-T (VIDEO)
D148	8-719-029-43	DIODE	CL-140SD-CD-T (VIDEO)
D149	8-719-029-43	DIODE	CL-140SD-CD-T (AUDIO)
D150	8-719-029-43	DIODE	CL-140SD-CD-T (AUDIO)
D151	8-719-029-43	DIODE	CL-140SD-CD-T (FADE)
D152	8-719-029-43	DIODE	CL-140SD-CD-T (FADE)
D153	8-719-029-43	DIODE	CL-140SD-CD-T (AUTO TRANS/PAUSE)
D154	8-719-029-43	DIODE	CL-140SD-CD-T (EFFECT TRANSITION)
D155	8-719-029-43	DIODE	CL-140SD-CD-T (EFFECT TRANSITION)
D156	8-719-029-43	DIODE	CL-140SD-CD-T (EFFECT TRANSITION)
D157	8-719-029-43	DIODE	CL-140SD-CD-T (EFFECT TRANSITION)
D158	8-719-029-43	DIODE	CL-140SD-CD-T (EFFECT TRANSITION)
D159	8-719-029-43	DIODE	CL-140SD-CD-T (EFFECT TRANSITION)
D160	8-719-029-43	DIODE	CL-140SD-CD-T (EFFECT TRANSITION)
D161	8-719-029-43	DIODE	CL-140SD-CD-T (EFFECT TRANSITION)
D162	8-719-029-43	DIODE	CL-140SD-CD-T (EFFECT TRANSITION)
D163	8-719-029-43	DIODE	CL-140SD-CD-T (EFFECT TRANSITION)
D164	8-719-104-34	DIODE	1S2836
D165	8-719-104-34	DIODE	1S2836
D166	8-719-104-34	DIODE	1S2836
D167	8-719-104-34	DIODE	1S2836
D168	8-719-104-34	DIODE	1S2836
D169	8-719-104-34	DIODE	1S2836
D170	8-719-104-34	DIODE	1S2836
D171	8-719-104-34	DIODE	1S2836
D172	8-719-029-43	DIODE	CL-140SD-CD-T (7)
D173	8-719-029-43	DIODE	CL-140SD-CD-T (8)
D174	8-719-029-43	DIODE	CL-140SD-CD-T (4)
D175	8-719-029-43	DIODE	CL-140SD-CD-T (5)
D176	8-719-029-43	DIODE	CL-140SD-CD-T (6)
D177	8-719-029-43	DIODE	CL-140SD-CD-T (-)
D178	8-719-029-43	DIODE	CL-140SD-CD-T (1)
D179	8-719-029-43	DIODE	CL-140SD-CD-T (2)
D180	8-719-029-43	DIODE	CL-140SD-CD-T (3)
D181	8-719-029-43	DIODE	CL-140SD-CD-T (CLR)
D182	8-719-029-43	DIODE	CL-140SD-CD-T (0)
D183	8-719-029-43	DIODE	CL-140SD-CD-T (00)
D184	8-719-029-43	DIODE	CL-140SD-CD-T (BS)
D185	8-719-029-43	DIODE	CL-140SD-CD-T (ENT)
D188	8-719-029-43	DIODE	CL-140SD-CD-T (NORMAL MIX)
D189	8-719-029-43	DIODE	CL-140SD-CD-T (LUMINA CLIP TRANS)
D190	8-719-029-43	DIODE	CL-140SD-CD-T (MOSAIK MIX)
D191	8-719-029-43	DIODE	CL-140SD-CD-T (LUMINA KEY)
D192	8-719-029-43	DIODE	CL-140SD-CD-T (POSTRZ MIX)
D193	8-719-029-43	DIODE	CL-140SD-CD-T (CHROMA KEY)
D194	8-719-029-43	DIODE	CL-140SD-CD-T (B & W MIX)
D195	8-719-029-43	DIODE	CL-140SD-CD-T (P in P)
D196	8-719-029-43	DIODE	CL-140SD-CD-T (▦)
D197	8-719-029-43	DIODE	CL-140SD-CD-T (▩)
D198	8-719-029-43	DIODE	CL-140SD-CD-T (▣)

Ref. No.	Part No.	Description	Remarks
D199	8-719-029-43	DIODE CL-140SD-CD-T (USER 2)	
D200	8-719-029-43	DIODE CL-140SD-CD-T ( )	
D201	8-719-029-43	DIODE CL-140SD-CD-T ( )	
D202	8-719-029-43	DIODE CL-140SD-CD-T ( )	
D203	8-719-029-43	DIODE CL-140SD-CD-T (USER 1)	
D204	8-719-029-43	DIODE CL-140SD-CD-T ( )	
D205	8-719-029-43	DIODE CL-140SD-CD-T ( )	
D206	8-719-029-43	DIODE CL-140SD-CD-T ( )	
D207	8-719-029-43	DIODE CL-140SD-CD-T (SCROLL)	
D208	8-719-029-43	DIODE CL-140SD-CD-T ( )	
D209	8-719-029-43	DIODE CL-140SD-CD-T ( )	
D210	8-719-029-43	DIODE CL-140SD-CD-T ( )	
D211	8-719-029-43	DIODE CL-140SD-CD-T (SIDE OUT)	
D212	8-719-029-43	DIODE CL-140SD-CD-T ( )	
D213	8-719-029-43	DIODE CL-140SD-CD-T ( )	
D214	8-719-029-43	DIODE CL-140SD-CD-T (SPLIT SLIDE)	
D215	8-719-029-43	DIODE CL-140SD-CD-T (SLIDE IN)	
		< IC >	
IC100	8-759-011-65	IC MC74HC4053F (SELECT SWITCH)	
IC101	8-759-927-29	IC SN74HCU04ANS (OSC)	
IC102	8-759-234-67	IC TMP82C79M-2 (KEY/LED CONTROLLER)	
IC103	8-759-234-67	IC TMP82C79M-2 (KEY/LED CONTROLLER)	
IC104	8-759-926-42	IC SN74HC238ANS (DECODER)	
IC105	8-759-926-11	IC SN74HC138ANS (DECODER)	
IC106	8-759-926-42	IC SN74HC238ANS (DECODER)	
IC107	8-759-926-11	IC SN74HC138ANS (DECODER)	
IC108	8-759-051-53	IC TD62381F (INVDRIVER)	
IC109	8-759-051-53	IC TD62381F (INVDRIVER)	
IC110	8-759-051-53	IC TD62381F (INVDRIVER)	
IC111	8-759-051-53	IC TD62381F (INVDRIVER)	
IC112	8-759-051-53	IC TD62381F (INVDRIVER)	
IC113	8-759-063-30	IC MC74HC374AF (DATA BUS LATCH)	
IC114	8-759-063-30	IC MC74HC374AF (DATA BUS LATCH)	
IC115	8-759-032-20	IC MC74HC32AF (CHIP SELECT)	
		< COIL >	
L100	1-410-381-11	INDUCTOR CHIP 10uH	
L101	1-410-381-11	INDUCTOR CHIP 10uH	
		< SWITCH >	
LS100	1-692-518-11	SWITCH, TACTIL(LS22BB-2SD/SD-T)	(WHITE FADE)
LS101	1-692-518-11	SWITCH, TACTIL(LS22BB-2SD/SD-T)	(LEVER PAUSE)
LS102	1-692-518-11	SWITCH, TACTIL(LS22BB-2SD/SD-T)	(BLACK FADE)
LS103	1-692-518-11	SWITCH, TACTIL(LS22BB-2SD/SD-T)	(REVERSE)
LS104	1-692-518-11	SWITCH, TACTIL(LS22BB-2SD/SD-T)	(CUT)
LS105	1-692-518-11	SWITCH, TACTIL(LS22BB-2SD/SD-T)	(A-BUS INPUT EFFECT)
LS106	1-692-518-11	SWITCH, TACTIL(LS22BB-2SD/SD-T)	(B-BUS INPUT EFFECT)
LS107	1-692-720-11	SWITCH, PUSH (LED)	(A-BUS P1)
LS108	1-692-720-11	SWITCH, PUSH (LED)	(A-BUS P2)
LS109	1-692-720-11	SWITCH, PUSH (LED)	(A-BUS AUX)
LS110	1-692-720-11	SWITCH, PUSH (LED)	(A-BUS BKGD)
LS111	1-692-720-11	SWITCH, PUSH (LED)	(B-BUS P1)
LS112	1-692-720-11	SWITCH, PUSH (LED)	(B-BUS P2)
LS113	1-692-720-11	SWITCH, PUSH (LED)	(B-BUS AUX)
LS114	1-692-720-11	SWITCH, PUSH (LED)	(B-BUS BKGD)
		< TRANSISTOR >	
Q100	8-729-901-04	TRANSISTOR DTA114EK	
Q103	8-729-904-48	TRANSISTOR DTB113EK	
Q105	8-729-904-48	TRANSISTOR DTB113EK	
Q106	8-729-904-48	TRANSISTOR DTB113EK	
Q107	8-729-904-48	TRANSISTOR DTB113EK	
Q108	8-729-904-48	TRANSISTOR DTB113EK	
Q109	8-729-904-48	TRANSISTOR DTB113EK	
Q110	8-729-904-48	TRANSISTOR DTB113EK	
Q111	8-729-904-48	TRANSISTOR DTB113EK	
Q112	8-729-904-48	TRANSISTOR DTB113EK	
Q113	8-729-904-48	TRANSISTOR DTB113EK	
Q114	8-729-904-48	TRANSISTOR DTB113EK	
Q115	8-729-904-48	TRANSISTOR DTB113EK	
Q116	8-729-904-48	TRANSISTOR DTB113EK	
Q117	8-729-904-48	TRANSISTOR DTB113EK	
Q118	8-729-904-48	TRANSISTOR DTB113EK	
Q119	8-729-901-04	TRANSISTOR DTA114EK	
		< RESISTOR >	
R102	1-216-121-00	METAL CHIP 1M 5% 1/10W	
R103	1-216-295-91	METAL GLAZE 0 5% 1/10W	
R104	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R105	1-216-164-00	METAL GLAZE 39 5% 1/8W	
R106	1-216-164-00	METAL GLAZE 39 5% 1/8W	
R107	1-216-089-91	METAL GLAZE 47K 5% 1/10W	
R108	1-216-089-91	METAL GLAZE 47K 5% 1/10W	
R109	1-216-089-91	METAL GLAZE 47K 5% 1/10W	
R110	1-216-089-91	METAL GLAZE 47K 5% 1/10W	
R111	1-216-089-91	METAL GLAZE 47K 5% 1/10W	
R112	1-216-089-91	METAL GLAZE 47K 5% 1/10W	
R113	1-216-089-91	METAL GLAZE 47K 5% 1/10W	
R114	1-216-089-91	METAL GLAZE 47K 5% 1/10W	
R116	1-216-089-91	METAL GLAZE 47K 5% 1/10W	
R117	1-216-089-91	METAL GLAZE 47K 5% 1/10W	
R118	1-216-089-91	METAL GLAZE 47K 5% 1/10W	
R119	1-216-089-91	METAL GLAZE 47K 5% 1/10W	
R120	1-216-164-00	METAL GLAZE 39 5% 1/8W	
R121	1-216-089-91	METAL GLAZE 47K 5% 1/10W	
R122	1-216-089-91	METAL GLAZE 47K 5% 1/10W	

Ref. No.	Part No.	Description			Remarks
R123	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R124	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R125	1-216-081-00	METAL CHIP	22K	5%	1/10W
R126	1-216-164-00	METAL GLAZE	39	5%	1/8W
R127	1-216-164-00	METAL GLAZE	39	5%	1/8W
R128	1-216-164-00	METAL GLAZE	39	5%	1/8W
R129	1-216-164-00	METAL GLAZE	39	5%	1/8W
R130	1-216-164-00	METAL GLAZE	39	5%	1/8W
R131	1-216-164-00	METAL GLAZE	39	5%	1/8W
R132	1-216-164-00	METAL GLAZE	39	5%	1/8W
R133	1-216-031-00	METAL CHIP	180	5%	1/10W
R134	1-216-164-00	METAL GLAZE	39	5%	1/8W
R135	1-216-031-00	METAL CHIP	180	5%	1/10W
R136	1-216-164-00	METAL GLAZE	39	5%	1/8W
R137	1-216-164-00	METAL GLAZE	39	5%	1/8W
R138	1-216-031-00	METAL CHIP	180	5%	1/10W
R139	1-216-073-00	METAL CHIP	10K	5%	1/10W
R140	1-216-164-00	METAL GLAZE	39	5%	1/8W
R141	1-216-164-00	METAL GLAZE	39	5%	1/8W
R142	1-216-164-00	METAL GLAZE	39	5%	1/8W
R143	1-216-031-00	METAL CHIP	180	5%	1/10W
R145	1-216-031-00	METAL CHIP	180	5%	1/10W
R146	1-216-031-00	METAL CHIP	180	5%	1/10W
R147	1-216-031-00	METAL CHIP	180	5%	1/10W
R148	1-216-031-00	METAL CHIP	180	5%	1/10W
R149	1-216-031-00	METAL CHIP	180	5%	1/10W
R150	1-216-031-00	METAL CHIP	180	5%	1/10W
R151	1-216-031-00	METAL CHIP	180	5%	1/10W
R152	1-216-031-00	METAL CHIP	180	5%	1/10W
R153	1-216-031-00	METAL CHIP	180	5%	1/10W
R154	1-216-031-00	METAL CHIP	180	5%	1/10W
R155	1-216-031-00	METAL CHIP	180	5%	1/10W
R156	1-216-031-00	METAL CHIP	180	5%	1/10W
R157	1-216-031-00	METAL CHIP	180	5%	1/10W
R158	1-216-031-00	METAL CHIP	180	5%	1/10W
R159	1-216-031-00	METAL CHIP	180	5%	1/10W
R160	1-216-031-00	METAL CHIP	180	5%	1/10W
R161	1-216-031-00	METAL CHIP	180	5%	1/10W
R162	1-216-031-00	METAL CHIP	180	5%	1/10W
R163	1-216-031-00	METAL CHIP	180	5%	1/10W
R164	1-216-031-00	METAL CHIP	180	5%	1/10W
R165	1-216-031-00	METAL CHIP	180	5%	1/10W
R166	1-216-031-00	METAL CHIP	180	5%	1/10W
R167	1-216-031-00	METAL CHIP	180	5%	1/10W
R168	1-216-031-00	METAL CHIP	180	5%	1/10W
R169	1-216-031-00	METAL CHIP	180	5%	1/10W
R170	1-216-031-00	METAL CHIP	180	5%	1/10W
R171	1-216-031-00	METAL CHIP	180	5%	1/10W
R172	1-216-031-00	METAL CHIP	180	5%	1/10W
R173	1-216-031-00	METAL CHIP	180	5%	1/10W

Ref. No.	Part No.	Description			Remarks
R174	1-216-031-00	METAL CHIP	180	5%	1/10W
R175	1-216-031-00	METAL CHIP	180	5%	1/10W
R176	1-216-031-00	METAL CHIP	180	5%	1/10W
R177	1-216-031-00	METAL CHIP	180	5%	1/10W
R178	1-216-031-00	METAL CHIP	180	5%	1/10W
R179	1-216-031-00	METAL CHIP	180	5%	1/10W
R180	1-216-031-00	METAL CHIP	180	5%	1/10W
R181	1-216-031-00	METAL CHIP	180	5%	1/10W
R182	1-216-031-00	METAL CHIP	180	5%	1/10W
R183	1-216-031-00	METAL CHIP	180	5%	1/10W
R184	1-216-031-00	METAL CHIP	180	5%	1/10W
R185	1-216-031-00	METAL CHIP	180	5%	1/10W
R186	1-216-295-91	METAL GLAZE	0	5%	1/10W
R187	1-216-295-91	METAL GLAZE	0	5%	1/10W
R188	1-216-295-91	METAL GLAZE	0	5%	1/10W
R189	1-216-295-91	METAL GLAZE	0	5%	1/10W
R190	1-216-295-91	METAL GLAZE	0	5%	1/10W
R191	1-216-295-91	METAL GLAZE	0	5%	1/10W
R192	1-216-295-91	METAL GLAZE	0	5%	1/10W
R193	1-216-295-91	METAL GLAZE	0	5%	1/10W
R202	1-216-295-91	METAL GLAZE	0	5%	1/10W
R210	1-216-295-91	METAL GLAZE	0	5%	1/10W
R212	1-216-295-91	METAL GLAZE	0	5%	1/10W
R213	1-216-295-91	METAL GLAZE	0	5%	1/10W
R214	1-216-295-91	METAL GLAZE	0	5%	1/10W
R215	1-216-295-91	METAL GLAZE	0	5%	1/10W
R216	1-216-295-91	METAL GLAZE	0	5%	1/10W
R217	1-216-295-91	METAL GLAZE	0	5%	1/10W
R218	1-216-295-91	METAL GLAZE	0	5%	1/10W
R219	1-216-295-91	METAL GLAZE	0	5%	1/10W
R220	1-216-295-91	METAL GLAZE	0	5%	1/10W
R221	1-216-295-91	METAL GLAZE	0	5%	1/10W
R223	1-216-295-91	METAL GLAZE	0	5%	1/10W
R224	1-216-295-91	METAL GLAZE	0	5%	1/10W
R225	1-216-295-91	METAL GLAZE	0	5%	1/10W
R226	1-216-295-91	METAL GLAZE	0	5%	1/10W
R227	1-216-295-91	METAL GLAZE	0	5%	1/10W
R228	1-216-295-91	METAL GLAZE	0	5%	1/10W
R229	1-216-295-91	METAL GLAZE	0	5%	1/10W

< SWITCH >

S100	1-571-787-11	SWITCH, TACTILE (7)
S101	1-571-787-11	SWITCH, TACTILE (8)
S102	1-571-787-11	SWITCH, TACTILE (9)
S103	1-571-787-11	SWITCH, TACTILE (+)
S104	1-571-787-11	SWITCH, TACTILE (4)
S105	1-571-787-11	SWITCH, TACTILE (5)
S106	1-571-787-11	SWITCH, TACTILE (6)
S107	1-571-787-11	SWITCH, TACTILE (-)
S108	1-571-787-11	SWITCH, TACTILE (1)
S109	1-571-787-11	SWITCH, TACTILE (2)

Ref. No.	Part No.	Description	Remarks
S110	1-571-787-11	SWITCH, TACTILE (3)	
S111	1-571-787-11	SWITCH, TACTILE (CLR)	
S112	1-571-787-11	SWITCH, TACTILE (0)	
S113	1-571-787-11	SWITCH, TACTILE (00)	
S114	1-571-787-11	SWITCH, TACTILE (BS)	
S115	1-571-787-11	SWITCH, TACTILE (ENT)	
S116	1-571-787-11	SWITCH, TACTILE ( )	
S117	1-571-787-11	SWITCH, TACTILE ( )	
S118	1-571-787-11	SWITCH, TACTILE ( )	
S119	1-571-787-11	SWITCH, TACTILE ( )	
S120	1-571-787-11	SWITCH, TACTILE ( )	
S121	1-571-787-11	SWITCH, TACTILE (NORMAL MIX)	
S122	1-571-787-11	SWITCH, TACTILE (LUMINA CLIP TRANS)	
S123	1-571-787-11	SWITCH, TACTILE ( )	
S124	1-571-787-11	SWITCH, TACTILE ( )	
S125	1-571-787-11	SWITCH, TACTILE ( )	
S126	1-571-787-11	SWITCH, TACTILE ( )	
S127	1-571-787-11	SWITCH, TACTILE ( )	
S128	1-571-787-11	SWITCH, TACTILE (MOSAIK MIX)	
S129	1-571-787-11	SWITCH, TACTILE (LUMINA KEY)	
S130	1-571-787-11	SWITCH, TACTILE (SPLIT SLIDE)	
S131	1-571-787-11	SWITCH, TACTILE ( )	
S132	1-571-787-11	SWITCH, TACTILE ( )	
S133	1-571-787-11	SWITCH, TACTILE ( )	
S134	1-571-787-11	SWITCH, TACTILE ( )	
S135	1-571-787-11	SWITCH, TACTILE (POSTRZ MIX)	
S136	1-571-787-11	SWITCH, TACTILE (CHROMA KEY)	
S137	1-571-787-11	SWITCH, TACTILE (SLIDE A)	
S138	1-571-787-11	SWITCH, TACTILE (SLIDE OUT)	
S139	1-571-787-11	SWITCH, TACTILE (SCROLL)	
S140	1-571-787-11	SWITCH, TACTILE (USER 1)	
S141	1-571-787-11	SWITCH, TACTILE (USER 2)	
S142	1-571-787-11	SWITCH, TACTILE (B & W MIX)	
S143	1-571-787-11	SWITCH, TACTILE (P in P)	
S144	1-571-787-11	SWITCH, TACTILE (VIDEO/AUDIO/FADE)	
S145	1-571-787-11	SWITCH, TACTILE (TRANSRATE)	
S146	1-571-787-11	SWITCH, TACTILE (TRANSRATE)	
S147	1-571-787-11	SWITCH, TACTILE (TRANSRATE)	
S148	1-571-787-11	SWITCH, TACTILE (AUTO TARNS/PAUSE)	
S149	1-571-787-11	SWITCH, TACTILE (AUDIO FOLLOW)	
S150	1-571-787-11	SWITCH, TACTILE (▼)	
S151	1-571-787-11	SWITCH, TACTILE (▲)	
		< VIBRATOR >	
X100	1-577-213-11	VIBRATOR, CRYSTAL 2MHz	

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Ref. No.	Part No.	Description			Remarks
*	1-649-632-11	KY-22 BOARD			
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		(Ref. No. 8,000 Series)			
		< CAPACITOR >			
C100	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C101	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C102	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C103	1-163-235-11	CERAMIC CHIP	22PF	5%	50V
C104	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C105	1-163-235-11	CERAMIC CHIP	22PF	5%	50V
C106	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C107	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C108	1-163-257-11	CERAMIC CHIP	180PF	5%	50V
C109	1-163-257-11	CERAMIC CHIP	180PF	5%	50V
C110	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C111	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C112	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C113	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C114	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C115	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C116	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C117	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C118	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C119	1-124-443-00	ELECT	100uF	20%	6.3V
C120	1-124-443-00	ELECT	100uF	20%	6.3V
C121	1-163-257-11	CERAMIC CHIP	180PF	5%	50V
C122	1-163-257-11	CERAMIC CHIP	180PF	5%	50V
C123	1-163-243-11	CERAMIC CHIP	47PF	5%	50V
		< CONNECTOR >			
CN100	1-566-535-11	CONNECTOR, FPC (ZIF) 19P			
CN101	1-564-014-11	PIN, CONNECTOR 4P			
CN102	1-504-485-11	PIN, CONNECTOR 6P			
CN103	1-565-211-11	CONNECTOR, FPC (ZIF) 22P			
		< DIODE >			
D100	8-719-974-44	DIODE PG4553KY (PLAY)			
D101	8-719-946-52	DIODE GL8EG22 (◀)			
D102	8-719-946-52	DIODE GL8EG22 (▶)			
D103	8-719-029-43	DIODE CL-140SD-CD-T (PREVIEW)			
D104	8-719-939-09	DIODE AA4553K (IN)			
D105	8-719-939-09	DIODE AA4553K (CUT EDIT)			
D107	8-719-939-09	DIODE AA4553K (A-ROLL)			
D108	8-719-104-34	DIODE 1S2835			
D109	8-719-028-06	DIODE CL-140UR-CD (AUTO ASM)			
D110	8-719-939-09	DIODE AA4553K (OUT)			
D111	8-719-939-09	DIODE AA4553K (ASMBL)			
D112	8-719-939-09	DIODE AA4553K (MIX)			
D113	8-719-939-09	DIODE AA4553K (SOURCE)			
D114	8-719-104-34	DIODE 1S2835			
D115	8-719-974-43	DIODE BR4553K (AUTO EDIT/END)			

Ref. No.	Part No.	Description	Remarks
D116	8-719-939-09	DIODE AA4553K (DUR)	
D117	8-719-939-09	DIODE AA4553K (V)	
D118	8-719-939-09	DIODE AA4553K (WIPE)	
D119	8-719-939-09	DIODE AA4553K (PGM)	
D120	8-719-939-09	DIODE AA4553K (REW)	
D121	8-719-974-43	DIODE BR4553K (REC)	
D122	8-719-939-09	DIODE AA4553K (P1)	
D123	8-719-104-34	DIODE 1S2835	
D124	8-719-029-43	DIODE CL-140SD-CD-T (SET-IN)	
D125	8-719-939-09	DIODE AA4553K (GO TO)	
D126	8-719-939-09	DIODE AA4553K (A1)	
D127	8-719-939-09	DIODE AA4553K (MAN)	
D128	8-719-939-09	DIODE AA4553K (A-BUS)	
D129	8-719-939-09	DIODE AA4553K (FF)	
D130	8-719-939-09	DIODE AA4553K (SPEED)	
D131	8-719-939-09	DIODE AA4553K (P2)	
D132	8-719-104-34	DIODE 1S2835	
D133	8-719-104-34	DIODE 1S2835	
D134	8-719-029-43	DIODE CL-140SD-CD-T (SET-OUT)	
D135	8-719-939-09	DIODE AA4553K (CLEAR)	
D136	8-719-939-09	DIODE AA4553K (A2)	
D137	8-719-029-43	DIODE CL-140SD-CD-T	
D138	8-719-939-09	DIODE AA4553K (B-BUS)	
D140	8-719-939-09	DIODE AA4553K (DMC)	
D141	8-719-939-09	DIODE AA4553K (R-VTR)	
D142	8-719-104-34	DIODE 1S2835	
D143	8-719-104-34	DIODE 1S2835	
D144	8-719-104-34	DIODE 1S2835	
D145	8-719-946-84	DIODE GL8HS22 (■)	
D146	8-719-939-09	DIODE AA4553K (STILL)	
D147	8-719-939-09	DIODE AA4553K (AUX)	
D148	8-719-939-09	DIODE AA4553K (AUDIO SPLIT)	
D149	8-719-939-09	DIODE AA4553K (REVIEW)	
D150	8-719-939-09	DIODE AA4553K (SET DUR)	
		< IC >	
IC100	8-759-927-29	IC SN74HCU04ANS (OSC)	
IC101	8-759-500-43	IC CXD8117P (J/S ENCODER)	
IC102	8-759-234-67	IC TMP82C79M-2 (KEY/LED CONTROLER)	
IC103	9-906-939-01	IC TD62383P (DRIVER)	
IC104	8-759-926-11	IC SN74HC138ANS (DECODER)	
		< COIL >	
L100	1-410-381-11	INDUCTOR 10uH	
		< PUSH SWITCH >	
LS107	1-692-720-11	SWITCH, PUSH (LED)	
LS108	1-692-720-11	SWITCH, PUSH (LED)	
LS109	1-692-720-11	SWITCH, PUSH (LED)	
LS110	1-692-720-11	SWITCH, PUSH (LED)	
LS111	1-692-720-11	SWITCH, PUSH (LED)	
LS112	1-692-720-11	SWITCH, PUSH (LED)	
LS113	1-692-720-11	SWITCH, PUSH (LED)	
LS114	1-692-720-11	SWITCH, PUSH (LED)	
		< TRANSISTOR >	
Q100	8-729-904-48	TRANSISTOR DTB113EK	
Q101	8-729-904-48	TRANSISTOR DTB113EK	
Q102	8-729-904-48	TRANSISTOR DTB113EK	
Q103	8-729-904-48	TRANSISTOR DTB113EK	
Q104	8-729-904-48	TRANSISTOR DTB113EK	
Q105	8-729-904-48	TRANSISTOR DTB113EK	
Q106	8-729-904-48	TRANSISTOR DTB113EK	
Q107	8-729-901-04	TRANSISTOR DTA114EK	
		< RESISTOR >	
R100	1-216-295-11	METAL CHIP 0 5% 1/10W	
R101	1-216-295-11	METAL CHIP 0 5% 1/10W	
R102	1-216-295-11	METAL CHIP 0 5% 1/10W	
R103	1-216-295-11	METAL CHIP 0 5% 1/10W	
R104	1-216-295-11	METAL CHIP 0 5% 1/10W	
R105	1-216-295-11	METAL CHIP 0 5% 1/10W	
R106	1-216-295-11	METAL CHIP 0 5% 1/10W	
R107	1-216-295-11	METAL CHIP 0 5% 1/10W	
R109	1-216-295-11	METAL CHIP 0 5% 1/10W	
R110	1-216-295-11	METAL CHIP 0 5% 1/10W	
R111	1-216-295-11	METAL CHIP 0 5% 1/10W	
R112	1-216-295-11	METAL CHIP 0 5% 1/10W	
R113	1-216-295-11	METAL CHIP 0 5% 1/10W	
R114	1-216-295-11	METAL CHIP 0 5% 1/10W	
R115	1-216-295-11	METAL CHIP 0 5% 1/10W	
R116	1-216-295-11	METAL CHIP 0 5% 1/10W	
R117	1-216-295-11	METAL CHIP 0 5% 1/10W	
R118	1-216-089-91	METAL CHIP 47K 5% 1/10W	
R119	1-216-089-91	METAL CHIP 47K 5% 1/10W	
R120	1-216-089-91	METAL CHIP 47K 5% 1/10W	
R122	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R123	1-216-121-00	METAL CHIP 1M 5% 1/10W	
R124	1-216-089-91	METAL CHIP 47K 5% 1/10W	
R125	1-216-089-91	METAL CHIP 47K 5% 1/10W	
R126	1-216-089-91	METAL CHIP 47K 5% 1/10W	
R127	1-216-089-91	METAL CHIP 47K 5% 1/10W	
R128	1-216-089-91	METAL CHIP 47K 5% 1/10W	
R129	1-216-031-00	METAL CHIP 180 5% 1/10W	
R130	1-216-031-00	METAL CHIP 180 5% 1/10W	
R131	1-216-031-00	METAL CHIP 180 5% 1/10W	
R132	1-216-031-00	METAL CHIP 180 5% 1/10W	
R133	1-216-031-00	METAL CHIP 180 5% 1/10W	
R134	1-216-031-00	METAL CHIP 180 5% 1/10W	
R135	1-216-031-00	METAL CHIP 180 5% 1/10W	
R136	1-216-031-00	METAL CHIP 180 5% 1/10W	

Ref. No.	Part No.	Description			Remarks
R137	1-216-031-00	METAL CHIP	180	5%	1/10W
R138	1-216-031-00	METAL CHIP	180	5%	1/10W
R139	1-216-031-00	METAL CHIP	180	5%	1/10W
R140	1-216-031-00	METAL CHIP	180	5%	1/10W
R141	1-216-031-00	METAL CHIP	180	5%	1/10W
R142	1-216-031-00	METAL CHIP	180	5%	1/10W
R143	1-216-031-00	METAL CHIP	180	5%	1/10W
R144	1-216-031-00	METAL CHIP	180	5%	1/10W
R145	1-216-031-00	METAL CHIP	180	5%	1/10W
R146	1-216-031-00	METAL CHIP	180	5%	1/10W
R147	1-216-073-00	METAL CHIP	10K	5%	1/10W
R148	1-216-073-00	METAL CHIP	10K	5%	1/10W
R149	1-216-073-00	METAL CHIP	10K	5%	1/10W
R150	1-216-073-00	METAL CHIP	10K	5%	1/10W
R151	1-216-081-00	METAL CHIP	22K	5%	1/10W
R152	1-216-067-00	METAL CHIP	5.6K	5%	1/10W
R153	1-216-049-00	METAL CHIP	1K	5%	1/10W
R154	1-216-049-00	METAL CHIP	1K	5%	1/10W
R155	1-216-049-00	METAL CHIP	1K	5%	1/10W
R156	1-216-049-00	METAL CHIP	1K	5%	1/10W
R157	1-216-081-00	METAL CHIP	22K	5%	1/10W
R158	1-216-049-00	METAL CHIP	1K	5%	1/10W
R159	1-216-031-00	METAL CHIP	180	5%	1/10W
R160	1-216-031-00	METAL CHIP	180	5%	1/10W
R161	1-216-031-00	METAL CHIP	180	5%	1/10W
		< VIBRATOR >			
X100	1-577-213-11	VIBRATOR, CRYSTAL			
**********					
*	A-7066-123-A	MJ-65 BOARD, COMPLETE			
		**********			
					(Ref. No. 3,000 Seriese)
	3-684-465-01	NUT, HEXAGON			
		< CAPACITOR >			
C081	1-163-003-11	CERAMIC CHIP	330PF	10%	50V
C083	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C084	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C085	1-124-778-00	ELECT CHIP	22uF	20%	6.3V
C086	1-126-193-11	ELECT	1uF	20%	50V
C087	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C088	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
		< DIODE >			
D081	8-719-801-78	DIODE 1SS184			
D082	8-719-801-78	DIODE 1SS184			
		< IC >			
IC081	8-759-266-09	IC NJM4562M(TE2) (MIC AMP)			

Ref. No.	Part No.	Description			Remarks
		< JACK >			
J081	1-507-932-11	JACK, LARGE TYPE (MIC)			
		< TRANSISTOR >			
Q081	8-729-216-22	TRANSISTOR 2SA1162-G			
Q082	8-729-202-38	TRANSISTOR 2SC3326N-A			
Q083	8-729-120-28	TRANSISTOR 2SC1623-L5L6			
		< RESISTOR >			
R081	1-216-067-00	METAL CHIP	5.6K	5%	1/10W
R082	1-216-042-00	METAL CHIP	510	5%	1/10W
R083	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R084	1-216-080-00	METAL CHIP	20K	5%	1/10W
R085	1-216-075-00	METAL CHIP	12K	5%	1/10W
R087	1-216-109-00	METAL CHIP	330K	5%	1/10W
R088	1-216-075-00	METAL CHIP	12K	5%	1/10W
R089	1-216-079-00	METAL CHIP	18K	5%	1/10W
R090	1-216-055-00	METAL CHIP	1.8K	5%	1/10W
R091	1-216-075-00	METAL CHIP	12K	5%	1/10W
R092	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
**********					
*	A-7066-127-A	MM-27 (P) BOARD, COMPLETE			
		**********			
					(Ref. No. 5,000 Seriese)
		< CAPACITOR >			
C001	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C002	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C101	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C102	1-162-920-11	CERAMIC CHIP	27PF	5%	50V
C103	1-162-920-11	CERAMIC CHIP	27PF	5%	50V
C104	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C105	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C106	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C107	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C108	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C121	1-162-919-11	CERAMIC CHIP	22PF	5%	50V
C122	1-162-919-11	CERAMIC CHIP	22PF	5%	50V
C123	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C124	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C125	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C126	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C127	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C131	1-162-919-11	CERAMIC CHIP	22PF	5%	50V
C132	1-162-957-11	CERAMIC CHIP	220PF	5%	50V
C133	1-164-357-11	CERAMIC CHIP	1000PF	5%	50V
C134	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C135	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C136	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C137	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C138	1-126-193-11	ELECT	1uF	20%	50V

Ref. No.	Part No.	Description			Remarks
C139	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C140	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C141	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C142	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C143	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C144	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
C145	1-164-699-11	CERAMIC CHIP	0.0033uF	5%	50V
C146	1-126-602-11	ELECT CHIP	3.3uF	20%	50V
C147	1-162-957-11	CERAMIC CHIP	220PF	5%	50V
C148	1-164-237-11	CERAMIC CHIP	16PF	5%	50V
C151	1-164-357-11	CERAMIC CHIP	1000PF	5%	50V
C152	1-164-357-11	CERAMIC CHIP	1000PF	5%	50V
C153	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C154	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C155	1-164-357-11	CERAMIC CHIP	1000PF	5%	50V
C171	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C172	1-162-918-11	CERAMIC CHIP	18PF	5%	50V
C173	1-162-918-11	CERAMIC CHIP	18PF	5%	50V
C175	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C176	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C177	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C181	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C182	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C183	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C184	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C185	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C186	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C187	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C188	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C201	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C202	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C203	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C204	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C205	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C211	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C212	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C213	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C214	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C215	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C221	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C222	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C223	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C224	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C225	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C231	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C232	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C301	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C302	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C303	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C304	1-164-156-11	CERAMIC CHIP	0.1uF		25V

Ref. No.	Part No.	Description			Remarks
C306	1-164-155-11	CERAMIC CHIP	75PF	5%	50V
C331	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C332	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C351	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C352	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C370	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C371	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C372	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C373	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C374	1-164-378-11	CERAMIC CHIP	30PF	5%	50V
C375	1-164-378-11	CERAMIC CHIP	30PF	5%	50V
C376	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C377	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C401	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C402	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C403	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C404	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C405	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C421	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C422	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C423	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C424	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C425	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C426	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C451	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C452	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C453	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C454	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C455	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C456	1-126-193-11	ELECT	1uF	20%	50V
C457	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C458	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C459	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C460	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C461	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
C462	1-164-699-11	CERAMIC CHIP	0.0033uF	5%	50V
C463	1-126-602-11	ELECT CHIP	3.3uF	20%	50V
C464	1-162-957-11	CERAMIC CHIP	220PF	5%	50V
C465	1-164-237-11	CERAMIC CHIP	16PF	5%	50V
C466	1-162-916-11	CERAMIC CHIP	12PF	5%	50V
C467	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C471	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C472	1-164-156-11	CERAMIC CHIP	0.1uF		25V

< CONNECTOR >

CN101	1-580-722-11	CONNECTOR, BOARD TO BOARD 28P
CN201	1-580-722-11	CONNECTOR, BOARD TO BOARD 28P

< VARIABLE CAPACITOR >

CV131	1-141-423-61	CAP, ADJ 20P
CV171	1-141-424-11	CAP, ADJ 30P

Ref. No.	Part No.	Description	Remarks
		< DIODE >	
D131	8-719-988-40	DIODE HVR17TRF	
D171	8-719-988-40	DIODE HVR17TRF	
D181	8-719-104-34	DIODE 1S2836	
D371	8-719-988-40	DIODE HVR17TRF	
D451	8-719-988-40	DIODE HVR17TRF	
		< FERRITE BEAD >	
FB010	1-412-390-21	INDUCTOR CHIP 0uH	
FB011	1-412-390-21	INDUCTOR CHIP 0uH	
FB012	1-412-390-21	INDUCTOR CHIP 0uH	
FB013	1-412-390-21	INDUCTOR CHIP 0uH	
FB014	1-412-390-21	INDUCTOR CHIP 0uH	
FB015	1-412-390-21	INDUCTOR CHIP 0uH	
FB016	1-412-390-21	INDUCTOR CHIP 0uH	
FB017	1-412-390-21	INDUCTOR CHIP 0uH	
FB018	1-412-390-21	INDUCTOR CHIP 0uH	
FB019	1-412-390-21	INDUCTOR CHIP 0uH	
FB020	1-412-390-21	INDUCTOR CHIP 0uH	
FB021	1-412-390-21	INDUCTOR CHIP 0uH	
FB022	1-412-390-21	INDUCTOR CHIP 0uH	
FB023	1-412-390-21	INDUCTOR CHIP 0uH	
FB024	1-412-390-21	INDUCTOR CHIP 0uH	
FB025	1-412-390-21	INDUCTOR CHIP 0uH	
FB026	1-412-390-21	INDUCTOR CHIP 0uH	
FB027	1-412-390-21	INDUCTOR CHIP 0uH	
FB028	1-412-390-21	INDUCTOR CHIP 0uH	
FB029	1-412-390-21	INDUCTOR CHIP 0uH	
FB030	1-412-390-21	INDUCTOR CHIP 0uH	
FB031	1-412-390-21	INDUCTOR CHIP 0uH	
FB051	1-412-390-21	INDUCTOR CHIP 0uH	
FB052	1-412-390-21	INDUCTOR CHIP 0uH	
FB053	1-412-390-21	INDUCTOR CHIP 0uH	
FB054	1-412-390-21	INDUCTOR CHIP 0uH	
FB055	1-412-390-21	INDUCTOR CHIP 0uH	
FB056	1-412-390-21	INDUCTOR CHIP 0uH	
FB057	1-412-390-21	INDUCTOR CHIP 0uH	
FB058	1-412-390-21	INDUCTOR CHIP 0uH	
FB059	1-412-390-21	INDUCTOR CHIP 0uH	
FB060	1-412-390-21	INDUCTOR CHIP 0uH	
FB061	1-412-390-21	INDUCTOR CHIP 0uH	
FB062	1-412-390-21	INDUCTOR CHIP 0uH	
FB063	1-412-390-21	INDUCTOR CHIP 0uH	
FB064	1-412-390-21	INDUCTOR CHIP 0uH	
FB065	1-412-390-21	INDUCTOR CHIP 0uH	
FB066	1-412-390-21	INDUCTOR CHIP 0uH	
FB067	1-412-390-21	INDUCTOR CHIP 0uH	
FB068	1-412-390-21	INDUCTOR CHIP 0uH	
FB069	1-412-390-21	INDUCTOR CHIP 0uH	
FB070	1-412-390-21	INDUCTOR CHIP 0uH	
FB071	1-412-390-21	INDUCTOR CHIP 0uH	
FB072	1-412-390-21	INDUCTOR CHIP 0uH	
FB073	1-412-390-21	INDUCTOR CHIP 0uH	
FB074	1-412-390-21	INDUCTOR CHIP 0uH	
FB101	1-543-813-21	FILTER, EMI	
FB102	1-543-813-21	FILTER, EMI	
FB103	1-216-296-91	METAL GLAZE 0 5% 1/8W	
FB121	1-543-813-21	FILTER, EMI	
FB122	1-543-813-21	FILTER, EMI	
FB123	1-216-296-91	METAL GLAZE 0 5% 1/8W	
FB133	1-543-813-21	FILTER, EMI	
FB171	1-543-813-21	FILTER, EMI	
FB181	1-543-813-21	FILTER, EMI	
FB201	1-543-813-21	FILTER, EMI	
FB202	1-543-813-21	FILTER, EMI	
FB211	1-543-813-21	FILTER, EMI	
FB212	1-543-813-21	FILTER, EMI	
FB221	1-543-813-21	FILTER, EMI	
FB222	1-543-813-21	FILTER, EMI	
FB231	1-543-813-21	FILTER, EMI	
FB301	1-543-813-21	FILTER, EMI	
FB371	1-543-813-21	FILTER, EMI	
FB372	1-543-813-21	FILTER, EMI	
FB401	1-543-813-21	FILTER, EMI	
FB421	1-543-813-21	FILTER, EMI	
FB471	1-543-813-21	FILTER, EMI	
		< IC >	
IC101	8-752-334-55	IC CXD1175AM (Y A/D CONVERTER)	
IC121	8-752-334-55	IC CXD1175AM (C A/D CONVERTER)	
IC131	8-759-987-20	IC CXD1229Q (WRITE TIMING GEN)	
IC132	8-759-030-16	IC MC34182M (BUFFER)	
IC151	8-759-710-82	IC NJM2406F (CLAMP)	
IC152	8-759-907-81	IC SN74LS221NS (M.M)	
IC153	8-759-032-23	IC MC74HC74AF (LATCH)	
IC154	8-759-063-30	IC MC74HC374AF (LATCH)	
IC181	8-759-987-17	IC CXD1226Q (DIGITAL CHROMA DECODER /DIGITAL NOISE REDUCTION)	
IC201	8-752-340-75	IC CXK1206AM (RAM)	
IC202	8-752-340-75	IC CXK1206AM (RAM)	
IC211	8-752-340-75	IC CXK1206AM (RAM)	
IC212	8-752-340-75	IC CXK1206AM (RAM)	
IC221	8-752-340-75	IC CXK1206AM (RAM)	
IC222	8-752-340-75	IC CXK1206AM (RAM)	
IC301	8-759-089-60	IC MB87448A-003 (MEMORY CONTROLLER)	
IC302	8-759-032-20	IC MC74HC32AF (MUTE/PULSE GEN)	
IC303	8-759-180-86	IC TC7W74F-TE12L (MUTE/PULSE GEN)	
IC304	8-759-242-72	IC TC7W00F (MUTE/PULSE GEN)	

Ref. No.	Part No.	Description	Remarks
IC305	8-759-926-97	IC SN74HC4024NS (MUTE/PULSE GEN)	
IC331	8-759-191-44	IC MB623831 (GATE ARRAY)	
IC351	8-759-987-18	IC CXD1227Q (DIGITAL CHROMA ENCODER /SPECIAL EFFECTS GEN)	
IC353	8-759-035-93	IC SC7S32F (GATE)	
IC371	8-752-306-51	IC CX23065A (PHASE COMP)	
IC401	8-752-334-64	IC CXD1171M (Y D/A CONVERTER)	
IC421	8-752-334-64	IC CXD1171M (C D/A CONVERTER)	
IC451	8-759-987-20	IC CXD1229Q (READ TIMING GEN)	
IC452	8-759-035-93	IC SC7S32F (BUFFER)	
IC471	8-759-242-74	IC TC7W04F (INV)	
IC472	8-759-063-30	IC MC74HC374AF (D-LATCH)	
IC932	8-759-242-68	IC TC7W32F (INC MASK)	
IC933	8-759-242-76	IC TC7W08F (INC MASK)	
IC934	8-759-032-23	IC MC74HC74AF (INC MASK)	
		< COIL >	
L131	1-410-393-11	INDUCTOR CHIP 100uH	
L132	1-410-377-31	INDUCTOR CHIP 4.7uH	
L451	1-410-377-31	INDUCTOR CHIP 4.7uH	
		< TRANSISTOR >	
Q101	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q131	8-729-216-22	TRANSISTOR 2SA1162-G	
Q171	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q371	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q401	8-729-216-22	TRANSISTOR 2SA1162-G	
Q421	8-729-216-22	TRANSISTOR 2SA1162-G	
		< RESISTOR >	
R101	1-218-845-11	METAL CHIP 820 0.50% 1/16W	
R102	1-218-867-11	METAL CHIP 6.8K 0.50% 1/16W	
R103	1-218-845-11	METAL CHIP 820 0.50% 1/16W	
R104	1-216-811-11	METAL CHIP 150 5% 1/16W	
R121	1-216-811-11	METAL CHIP 150 5% 1/16W	
R122	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R123	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R131	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R132	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R133	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R134	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R135	1-218-853-11	METAL CHIP 1.8K 0.50% 1/16W	
R136	1-216-855-11	METAL CHIP 680K 5% 1/16W	
R137	1-216-825-11	METAL CHIP 2.2K 5% 1/16W	
R138	1-216-804-11	METAL CHIP 39 5% 1/16W	
R139	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R140	1-216-825-11	METAL CHIP 2.2K 5% 1/16W	
R141	1-216-804-11	METAL CHIP 39 5% 1/16W	
R142	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R143	1-216-833-11	METAL CHIP 10K 5% 1/16W	

Ref. No.	Part No.	Description	Remarks
R144	1-216-809-11	METAL CHIP 100 5% 1/16W	
R145	1-216-839-11	METAL CHIP 33K 5% 1/16W	
R146	1-216-839-11	METAL CHIP 33K 5% 1/16W	
R147	1-216-839-11	METAL CHIP 33K 5% 1/16W	
R148	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R149	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R150	1-216-839-11	METAL CHIP 33K 5% 1/16W	
R151	1-216-838-11	METAL CHIP 27K 5% 1/16W	
R152	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R153	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R154	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R155	1-216-825-11	METAL CHIP 2.2K 5% 1/16W	
R156	1-216-840-11	METAL CHIP 39K 5% 1/16W	
R157	1-218-295-11	METAL GLAZE 43K 5% 1/16W	
R171	1-216-825-11	METAL CHIP 2.2K 5% 1/16W	
R172	1-216-837-11	METAL CHIP 22K 5% 1/16W	
R173	1-216-839-11	METAL CHIP 33K 5% 1/16W	
R174	1-216-839-11	METAL CHIP 33K 5% 1/16W	
R175	1-216-809-11	METAL CHIP 100 5% 1/16W	
R181	1-216-845-11	METAL CHIP 100K 5% 1/16W	
R182	1-220-372-11	METAL GLAZE 200K 5% 1/16W	
R183	1-216-852-11	METAL CHIP 390K 5% 1/16W	
R184	1-216-856-11	METAL CHIP 820K 5% 1/16W	
R185	1-216-857-11	METAL CHIP 1M 5% 1/16W	
R186	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R187	1-216-857-11	METAL CHIP 1M 5% 1/16W	
R188	1-216-845-11	METAL CHIP 100K 5% 1/16W	
R189	1-220-372-11	METAL GLAZE 200K 5% 1/16W	
R190	1-216-852-11	METAL CHIP 390K 5% 1/16W	
R191	1-216-856-11	METAL CHIP 820K 5% 1/16W	
R192	1-216-823-11	METAL CHIP 1.5K 5% 1/16W	
R193	1-216-809-11	METAL CHIP 100 5% 1/16W	
R194	1-216-809-11	METAL CHIP 100 5% 1/16W	
R197	1-216-829-11	METAL CHIP 4.7K 5% 1/16W	
R198	1-216-829-11	METAL CHIP 4.7K 5% 1/16W	
R302	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R303	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R304	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R305	1-216-864-11	METAL CHIP 0 5% 1/16W	
R306	1-216-845-11	METAL CHIP 100K 5% 1/16W	
R307	1-216-845-11	METAL CHIP 100K 5% 1/16W	
R308	1-216-845-11	METAL CHIP 100K 5% 1/16W	
R309	1-216-845-11	METAL CHIP 100K 5% 1/16W	
R310	1-216-845-11	METAL CHIP 100K 5% 1/16W	
R311	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R314	1-216-864-11	METAL CHIP 0 5% 1/16W	
R315	1-216-864-11	METAL CHIP 0 5% 1/16W	
R318	1-216-864-11	METAL CHIP 0 5% 1/16W	
R321	1-216-845-11	METAL CHIP 100K 5% 1/16W	
R322	1-216-845-11	METAL CHIP 100K 5% 1/16W	

Ref. No.	Part No.	Description			Remarks
R323	1-216-845-11	METAL CHIP	100K	5%	1/16W
R324	1-216-845-11	METAL CHIP	100K	5%	1/16W
R331	1-216-845-11	METAL CHIP	100K	5%	1/16W
R333	1-216-864-11	METAL CHIP	0	5%	1/16W
R351	1-216-833-11	METAL CHIP	10K	5%	1/16W
R352	1-216-857-11	METAL CHIP	1M	5%	1/16W
R370	1-216-833-11	METAL CHIP	10K	5%	1/16W
R371	1-216-828-11	METAL CHIP	3.9K	5%	1/16W
R372	1-216-839-11	METAL CHIP	33K	5%	1/16W
R373	1-216-839-11	METAL CHIP	33K	5%	1/16W
R374	1-216-840-11	METAL CHIP	39K	5%	1/16W
R375	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R401	1-216-809-11	METAL CHIP	100	5%	1/16W
R402	1-216-809-11	METAL CHIP	100	5%	1/16W
R403	1-216-809-11	METAL CHIP	100	5%	1/16W
R404	1-216-809-11	METAL CHIP	100	5%	1/16W
R405	1-216-809-11	METAL CHIP	100	5%	1/16W
R406	1-216-809-11	METAL CHIP	100	5%	1/16W
R407	1-216-809-11	METAL CHIP	100	5%	1/16W
R408	1-216-809-11	METAL CHIP	100	5%	1/16W
R409	1-218-859-11	METAL CHIP	3.3K	0.50%	1/16W
R410	1-218-831-11	METAL GLAZE	220	0.50%	1/16W
R411	1-218-831-11	METAL GLAZE	220	0.50%	1/16W
R412	1-216-816-11	METAL CHIP	390	5%	1/16W
R421	1-216-809-11	METAL CHIP	100	5%	1/16W
R422	1-216-809-11	METAL CHIP	100	5%	1/16W
R423	1-216-809-11	METAL CHIP	100	5%	1/16W
R424	1-216-809-11	METAL CHIP	100	5%	1/16W
R425	1-216-809-11	METAL CHIP	100	5%	1/16W
R426	1-216-809-11	METAL CHIP	100	5%	1/16W
R427	1-216-809-11	METAL CHIP	100	5%	1/16W
R428	1-216-809-11	METAL CHIP	100	5%	1/16W
R429	1-218-859-11	METAL CHIP	3.3K	0.50%	1/16W
R430	1-218-831-11	METAL GLAZE	220	0.50%	1/16W
R431	1-218-831-11	METAL GLAZE	220	0.50%	1/16W
R432	1-216-816-11	METAL CHIP	390	5%	1/16W
R451	1-218-844-11	METAL CHIP	750	0.50%	1/16W
R452	1-216-855-11	METAL CHIP	680K	5%	1/16W
R453	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R454	1-216-807-11	METAL CHIP	68	5%	1/16W
R455	1-216-821-11	METAL CHIP	1K	5%	1/16W
R456	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R457	1-216-806-11	METAL GLAZE	56	5%	1/16W
R458	1-216-821-11	METAL CHIP	1K	5%	1/16W
R459	1-216-833-11	METAL CHIP	10K	5%	1/16W
R461	1-216-833-11	METAL CHIP	10K	5%	1/16W
R462	1-216-821-11	METAL CHIP	1K	5%	1/16W
R463	1-216-839-11	METAL CHIP	33K	5%	1/16W
R464	1-216-839-11	METAL CHIP	33K	5%	1/16W
R465	1-216-839-11	METAL CHIP	33K	5%	1/16W

Ref. No.	Part No.	Description			Remarks
R466	1-216-833-11	METAL CHIP	10K	5%	1/16W
R467	1-216-821-11	METAL CHIP	1K	5%	1/16W
R469	1-216-864-11	METAL CHIP	0	5%	1/16W
R475	1-216-864-11	METAL CHIP	0	5%	1/16W
		< VIBRATOR >			
X171	1-579-780-21	VIBRATOR, CRYSTAL 14.31 MHz			
X371	1-579-780-21	VIBRATOR, CRYSTAL 14.31 MHz			
**********					
*	A-7053-847-A	RE-25 BOARD, COMPLETE			
		**********			
		(Ref. No. 3,000 Seriese)			
	1-751-560-11	CABLE, FLAT (FAI-1)			
	1-751-561-11	CABLE, FLAT (FAO-1)			
		< CAPACITOR >			
C301	1-126-204-11	ELECT CHIP	47uF	20%	16V
C302	1-126-204-11	ELECT CHIP	47uF	20%	16V
C304	1-126-400-11	ELECT	22uF	20%	35V
C305	1-163-025-11	CERAMIC CHIP	0.001uF		50V
C306	1-126-204-11	ELECT CHIP	47uF	20%	16V
C307	1-126-204-11	ELECT CHIP	47uF	20%	16V
C309	1-126-400-11	ELECT	22uF	20%	35V
C310	1-163-025-11	CERAMIC CHIP	0.001uF		50V
C311	1-163-025-11	CERAMIC CHIP	0.001uF		50V
C312	1-163-035-00	CERAMIC CHIP	0.047uF		50V
C313	1-163-035-00	CERAMIC CHIP	0.047uF		50V
C314	1-163-035-00	CERAMIC CHIP	0.047uF		50V
C315	1-163-035-00	CERAMIC CHIP	0.047uF		50V
C316	1-163-035-00	CERAMIC CHIP	0.047uF		50V
C317	1-163-035-00	CERAMIC CHIP	0.047uF		50V
C318	1-163-035-00	CERAMIC CHIP	0.047uF		50V
C319	1-163-035-00	CERAMIC CHIP	0.047uF		50V
C321	1-163-025-11	CERAMIC CHIP	0.001uF		50V
C322	1-126-400-11	ELECT	22uF	20%	35V
C323	1-163-025-11	CERAMIC CHIP	0.001uF		50V
C324	1-126-400-11	ELECT	22uF	20%	35V
C325	1-163-025-11	CERAMIC CHIP	0.001uF		50V
C326	1-126-400-11	ELECT	22uF	20%	35V
C327	1-163-025-11	CERAMIC CHIP	0.001uF		50V
C328	1-126-400-11	ELECT	22uF	20%	35V
C329	1-163-025-11	CERAMIC CHIP	0.001uF		50V
C330	1-126-400-11	ELECT	22uF	20%	35V
C331	1-163-025-11	CERAMIC CHIP	0.001uF		50V
C332	1-126-400-11	ELECT	22uF	20%	35V
C333	1-163-025-11	CERAMIC CHIP	0.001uF		50V
C334	1-126-400-11	ELECT	22uF	20%	35V
C335	1-126-204-11	ELECT CHIP	47uF	20%	16V
C336	1-126-204-11	ELECT CHIP	47uF	20%	16V
C337	1-126-204-11	ELECT CHIP	47uF	20%	16V
C338	1-126-204-11	ELECT CHIP	47uF	20%	16V

Ref. No.	Part No.	Description			Remarks
C339	1-126-204-11	ELECT CHIP	47uF	20%	16V
C340	1-126-204-11	ELECT CHIP	47uF	20%	16V
C404	1-126-400-11	ELECT	22uF	20%	35V
C405	1-163-025-11	CERAMIC CHIP	0.001uF		50V
C406	1-126-204-11	ELECT CHIP	47uF	20%	16V
C407	1-126-204-11	ELECT CHIP	47uF	20%	16V
C409	1-126-400-11	ELECT	22uF	20%	35V
C410	1-163-025-11	CERAMIC CHIP	0.001uF		50V
C411	1-163-025-11	CERAMIC CHIP	0.001uF		50V
C421	1-163-025-11	CERAMIC CHIP	0.001uF		50V
C422	1-126-400-11	ELECT	22uF	20%	35V
C423	1-163-025-11	CERAMIC CHIP	0.001uF		50V
C424	1-126-400-11	ELECT	22uF	20%	35V
C425	1-163-025-11	CERAMIC CHIP	0.001uF		50V
C426	1-126-400-11	ELECT	22uF	20%	35V
C427	1-163-025-11	CERAMIC CHIP	0.001uF		50V
C428	1-126-400-11	ELECT	22uF	20%	35V
C429	1-163-025-11	CERAMIC CHIP	0.001uF		50V
C430	1-126-400-11	ELECT	22uF	20%	35V
C431	1-163-025-11	CERAMIC CHIP	0.001uF		50V
C432	1-126-400-11	ELECT	22uF	20%	35V
C433	1-163-025-11	CERAMIC CHIP	0.001uF		50V
C434	1-126-400-11	ELECT	22uF	20%	35V
		< CONNECTOR >			
CN301	1-566-532-11	CONNECTOR, FPC (ZIF) 16P			
CN302	1-568-207-11	CONNECTOR, FPC (ZIF) 23P			
CN303	1-506-479-11	PIN, CONNECTOR 14P			
CN304	1-506-477-11	PIN, CONNECTOR 12P			
* CN305	1-564-009-11	PIN, CONNECTOR 10P			
CN306	1-506-471-11	PIN, CONNECTOR 6P			
CN307	1-506-471-11	PIN, CONNECTOR 6P			
		< DIODE >			
D301	8-719-107-15	DIODE	RD18M-B2		
D302	8-719-107-15	DIODE	RD18M-B2		
D303	8-719-107-15	DIODE	RD18M-B2		
D304	8-719-107-15	DIODE	RD18M-B2		
D305	8-719-107-15	DIODE	RD18M-B2		
D306	8-719-107-15	DIODE	RD18M-B2		
D311	8-719-107-15	DIODE	RD18M-B2		
D312	8-719-107-15	DIODE	RD18M-B2		
D313	8-719-107-15	DIODE	RD18M-B2		
D314	8-719-107-15	DIODE	RD18M-B2		
D315	8-719-107-15	DIODE	RD18M-B2		
D316	8-719-107-15	DIODE	RD18M-B2		
D317	8-719-107-15	DIODE	RD18M-B2		
D318	8-719-107-15	DIODE	RD18M-B2		
D319	8-719-107-15	DIODE	RD18M-B2		

Ref. No.	Part No.	Description		Remarks
D320	8-719-107-15	DIODE	RD18M-B2	
D321	8-719-107-15	DIODE	RD18M-B2	
D322	8-719-107-15	DIODE	RD18M-B2	
D323	8-719-107-15	DIODE	RD18M-B2	
D324	8-719-107-15	DIODE	RD18M-B2	
D331	8-719-106-80	DIODE	RD13M-B2	
D332	8-719-106-80	DIODE	RD13M-B2	
D333	8-719-106-80	DIODE	RD13M-B2	
D334	8-719-106-80	DIODE	RD13M-B2	
D335	8-719-106-80	DIODE	RD13M-B2	
D336	8-719-106-80	DIODE	RD13M-B2	
D337	8-719-106-80	DIODE	RD13M-B2	
D338	8-719-106-80	DIODE	RD13M-B2	
D339	8-719-106-80	DIODE	RD13M-B2	
D340	8-719-106-80	DIODE	RD13M-B2	
D341	8-719-106-80	DIODE	RD13M-B2	
D342	8-719-106-80	DIODE	RD13M-B2	
D343	8-719-106-80	DIODE	RD13M-B2	
D344	8-719-106-80	DIODE	RD13M-B2	
D345	8-719-106-80	DIODE	RD13M-B2	
D346	8-719-106-80	DIODE	RD13M-B2	
D347	8-719-106-80	DIODE	RD13M-B2	
D348	8-719-106-80	DIODE	RD13M-B2	
D349	8-719-106-80	DIODE	RD13M-B2	
D350	8-719-106-80	DIODE	RD13M-B2	
D351	8-719-106-80	DIODE	RD13M-B2	
D352	8-719-106-80	DIODE	RD13M-B2	
D361	8-719-106-80	DIODE	RD13M-B2	
D362	8-719-106-80	DIODE	RD13M-B2	
D363	8-719-106-80	DIODE	RD13M-B2	
D364	8-719-106-80	DIODE	RD13M-B2	
D365	8-719-106-80	DIODE	RD13M-B2	
D366	8-719-106-80	DIODE	RD13M-B2	
D367	8-719-106-80	DIODE	RD13M-B2	
D368	8-719-106-80	DIODE	RD13M-B2	
D369	8-719-106-80	DIODE	RD13M-B2	
D370	8-719-106-80	DIODE	RD13M-B2	
D371	8-719-106-80	DIODE	RD13M-B2	
D372	8-719-106-80	DIODE	RD13M-B2	
D373	8-719-106-80	DIODE	RD13M-B2	
D374	8-719-106-80	DIODE	RD13M-B2	
D375	8-719-106-80	DIODE	RD13M-B2	
D376	8-719-106-80	DIODE	RD13M-B2	
D377	8-719-106-80	DIODE	RD13M-B2	
D378	8-719-106-80	DIODE	RD13M-B2	
D379	8-719-106-80	DIODE	RD13M-B2	
D380	8-719-106-80	DIODE	RD13M-B2	
D381	8-719-106-80	DIODE	RD13M-B2	
D382	8-719-106-80	DIODE	RD13M-B2	
D383	8-719-106-80	DIODE	RD13M-B2	

Ref. No.	Part No.	Description	Remarks
D384	8-719-106-80	DIODE RD13M-B2	
D391	8-719-106-80	DIODE RD13M-B2	
D392	8-719-106-80	DIODE RD13M-B2	
D393	8-719-106-80	DIODE RD13M-B2	
D394	8-719-106-80	DIODE RD13M-B2	
D395	8-719-106-80	DIODE RD13M-B2	
D396	8-719-106-80	DIODE RD13M-B2	
D401	8-719-107-15	DIODE RD18M-B2	
D402	8-719-107-15	DIODE RD18M-B2	
D403	8-719-107-15	DIODE RD18M-B2	
D404	8-719-107-15	DIODE RD18M-B2	
D405	8-719-107-15	DIODE RD18M-B2	
D406	8-719-107-15	DIODE RD18M-B2	
D411	8-719-107-15	DIODE RD18M-B2	
D412	8-719-107-15	DIODE RD18M-B2	
D413	8-719-107-15	DIODE RD18M-B2	
D414	8-719-107-15	DIODE RD18M-B2	
D415	8-719-107-15	DIODE RD18M-B2	
D416	8-719-107-15	DIODE RD18M-B2	
D417	8-719-107-15	DIODE RD18M-B2	
D418	8-719-107-15	DIODE RD18M-B2	
D419	8-719-107-15	DIODE RD18M-B2	
D420	8-719-107-15	DIODE RD18M-B2	
D421	8-719-107-15	DIODE RD18M-B2	
D422	8-719-107-15	DIODE RD18M-B2	
D423	8-719-107-15	DIODE RD18M-B2	
D424	8-719-107-15	DIODE RD18M-B2	
		< FERRITE BEAD >	
FB301	1-412-390-21	INDUCTOR CHIP 0uH	
FB302	1-412-390-21	INDUCTOR CHIP 0uH	
FB303	1-412-390-21	INDUCTOR CHIP 0uH	
FB311	1-412-390-21	INDUCTOR CHIP 0uH	
FB312	1-412-390-21	INDUCTOR CHIP 0uH	
FB313	1-412-390-21	INDUCTOR CHIP 0uH	
FB314	1-412-390-21	INDUCTOR CHIP 0uH	
FB315	1-412-390-21	INDUCTOR CHIP 0uH	
FB316	1-412-390-21	INDUCTOR CHIP 0uH	
FB317	1-412-390-21	INDUCTOR CHIP 0uH	
FB321	1-412-390-21	INDUCTOR CHIP 0uH	
FB324	1-412-390-21	INDUCTOR CHIP 0uH	
FB325	1-412-390-21	INDUCTOR CHIP 0uH	
FB328	1-412-390-21	INDUCTOR CHIP 0uH	
FB329	1-412-390-21	INDUCTOR CHIP 0uH	
FB330	1-412-390-21	INDUCTOR CHIP 0uH	
FB331	1-412-390-21	INDUCTOR CHIP 0uH	
FB332	1-412-390-21	INDUCTOR CHIP 0uH	
FB333	1-412-390-21	INDUCTOR CHIP 0uH	
FB334	1-412-390-21	INDUCTOR CHIP 0uH	
FB335	1-412-390-21	INDUCTOR CHIP 0uH	
FB341	1-412-390-21	INDUCTOR CHIP 0uH	
FB344	1-412-390-21	INDUCTOR CHIP 0uH	
FB345	1-412-390-21	INDUCTOR CHIP 0uH	
FB348	1-412-390-21	INDUCTOR CHIP 0uH	
FB349	1-412-390-21	INDUCTOR CHIP 0uH	
FB352	1-412-390-21	INDUCTOR CHIP 0uH	
FB353	1-412-390-21	INDUCTOR CHIP 0uH	
FB356	1-412-390-21	INDUCTOR CHIP 0uH	
FB357	1-412-390-21	INDUCTOR CHIP 0uH	
FB358	1-412-390-21	INDUCTOR CHIP 0uH	
FB359	1-412-390-21	INDUCTOR CHIP 0uH	
FB360	1-412-390-21	INDUCTOR CHIP 0uH	
FB361	1-412-390-21	INDUCTOR CHIP 0uH	
FB362	1-412-390-21	INDUCTOR CHIP 0uH	
FB363	1-412-390-21	INDUCTOR CHIP 0uH	
FB364	1-412-390-21	INDUCTOR CHIP 0uH	
FB401	1-412-390-21	INDUCTOR CHIP 0uH	
FB402	1-412-390-21	INDUCTOR CHIP 0uH	
FB403	1-412-390-21	INDUCTOR CHIP 0uH	
FB411	1-412-390-21	INDUCTOR CHIP 0uH	
FB412	1-412-390-21	INDUCTOR CHIP 0uH	
FB413	1-412-390-21	INDUCTOR CHIP 0uH	
FB414	1-412-390-21	INDUCTOR CHIP 0uH	
FB415	1-412-390-21	INDUCTOR CHIP 0uH	
FB416	1-412-390-21	INDUCTOR CHIP 0uH	
FB417	1-412-390-21	INDUCTOR CHIP 0uH	
		< IC >	
IC301	8-759-981-86	IC RC4556MA (AMP)	
IC302	8-759-100-96	IC uPC4558G2 (BUFFER AMP)	
IC303	8-759-100-96	IC uPC4558G2 (BUFFER AMP)	
IC304	8-759-100-96	IC uPC4558G2 (BUFFER AMP)	
IC305	8-759-100-96	IC uPC4558G2 (BUFFER AMP)	
IC306	8-759-100-96	IC uPC4558G2 (BUFFER AMP)	
IC401	8-759-981-86	IC RC4556MA (AMP)	
IC402	8-759-100-96	IC uPC4558G2 (BUFFER AMP)	
IC403	8-759-100-96	IC uPC4558G2 (BUFFER AMP)	
		< JACK >	
* J301	1-537-606-11	TERMINAL BOARD (PLAYER 1/2)	
* J302	1-537-606-21	TERMINAL BOARD (AUX 1/2 RECORDER/PGM 1)	
* J303	1-537-607-11	TERMINAL BOARD (PGM 2/MONITOR)	
* J304	1-764-066-11	CONNECTOR, BNC (BB OUT)	
* J305	1-764-066-11	CONNECTOR, BNC (BB OUT)	
* J306	1-764-066-11	CONNECTOR, BNC (GPI OUT)	
* J307	1-764-067-11	CONNECTOR, BNC (GPI IN)	

Ref. No.	Part No.	Description			Remarks
		< TRANSISTOR >			
Q301	8-729-202-38	TRANSISTOR	2SC3326N-A		
Q302	8-729-202-38	TRANSISTOR	2SC3326N-A		
Q303	8-729-202-38	TRANSISTOR	2SC3326N-A		
Q304	8-729-202-38	TRANSISTOR	2SC3326N-A		
Q401	8-729-202-38	TRANSISTOR	2SC3326N-A		
Q402	8-729-202-38	TRANSISTOR	2SC3326N-A		
Q403	8-729-202-38	TRANSISTOR	2SC3326N-A		
Q404	8-729-202-38	TRANSISTOR	2SC3326N-A		
		< RESISTOR >			
R301	1-216-049-00	METAL CHIP	1K	5%	1/10W
R302	1-216-105-00	METAL CHIP	220K	5%	1/10W
R303	1-216-055-00	METAL CHIP	1.8K	5%	1/10W
R304	1-216-075-00	METAL CHIP	12K	5%	1/10W
R305	1-216-043-00	METAL CHIP	560	5%	1/10W
R306	1-216-073-00	METAL CHIP	10K	5%	1/10W
R307	1-216-043-00	METAL CHIP	560	5%	1/10W
R308	1-216-073-00	METAL CHIP	10K	5%	1/10W
R309	1-216-097-00	METAL CHIP	100K	5%	1/10W
R311	1-216-105-00	METAL CHIP	220K	5%	1/10W
R312	1-216-055-00	METAL CHIP	1.8K	5%	1/10W
R313	1-216-075-00	METAL CHIP	12K	5%	1/10W
R314	1-216-043-00	METAL CHIP	560	5%	1/10W
R315	1-216-073-00	METAL CHIP	10K	5%	1/10W
R316	1-216-043-00	METAL CHIP	560	5%	1/10W
R317	1-216-073-00	METAL CHIP	10K	5%	1/10W
R318	1-216-097-00	METAL CHIP	100K	5%	1/10W
R321	1-216-105-00	METAL CHIP	220K	5%	1/10W
R322	1-216-041-00	METAL CHIP	470	5%	1/10W
R323	1-216-031-00	METAL CHIP	180	5%	1/10W
R324	1-216-025-00	METAL CHIP	100	5%	1/10W
R325	1-216-105-00	METAL CHIP	220K	5%	1/10W
R326	1-216-041-00	METAL CHIP	470	5%	1/10W
R327	1-216-031-00	METAL CHIP	180	5%	1/10W
R328	1-216-025-00	METAL CHIP	100	5%	1/10W
R329	1-216-105-00	METAL CHIP	220K	5%	1/10W
R330	1-216-041-00	METAL CHIP	470	5%	1/10W
R331	1-216-031-00	METAL CHIP	180	5%	1/10W
R332	1-216-025-00	METAL CHIP	100	5%	1/10W
R333	1-216-105-00	METAL CHIP	220K	5%	1/10W
R334	1-216-041-00	METAL CHIP	470	5%	1/10W
R335	1-216-031-00	METAL CHIP	180	5%	1/10W
R336	1-216-025-00	METAL CHIP	100	5%	1/10W
R337	1-216-105-00	METAL CHIP	220K	5%	1/10W
R338	1-216-041-00	METAL CHIP	470	5%	1/10W
R339	1-216-031-00	METAL CHIP	180	5%	1/10W
R340	1-216-025-00	METAL CHIP	100	5%	1/10W
R341	1-216-105-00	METAL CHIP	220K	5%	1/10W
R342	1-216-041-00	METAL CHIP	470	5%	1/10W
R343	1-216-031-00	METAL CHIP	180	5%	1/10W

Ref. No.	Part No.	Description			Remarks
R344	1-216-025-00	METAL CHIP	100	5%	1/10W
R345	1-216-105-00	METAL CHIP	220K	5%	1/10W
R346	1-216-041-00	METAL CHIP	470	5%	1/10W
R347	1-216-031-00	METAL CHIP	180	5%	1/10W
R348	1-216-025-00	METAL CHIP	100	5%	1/10W
R349	1-216-105-00	METAL CHIP	220K	5%	1/10W
R350	1-216-105-00	METAL CHIP	220K	5%	1/10W
R351	1-216-105-00	METAL CHIP	220K	5%	1/10W
R352	1-216-105-00	METAL CHIP	220K	5%	1/10W
R353	1-216-105-00	METAL CHIP	220K	5%	1/10W
R354	1-216-105-00	METAL CHIP	220K	5%	1/10W
R355	1-216-105-00	METAL CHIP	220K	5%	1/10W
R390	1-216-045-00	METAL CHIP	680	5%	1/10W
R391	1-216-045-00	METAL CHIP	680	5%	1/10W
R392	1-216-045-00	METAL CHIP	680	5%	1/10W
R393	1-216-045-00	METAL CHIP	680	5%	1/10W
R394	1-216-045-00	METAL CHIP	680	5%	1/10W
R395	1-216-045-00	METAL CHIP	680	5%	1/10W
R396	1-216-045-00	METAL CHIP	680	5%	1/10W
R397	1-216-045-00	METAL CHIP	680	5%	1/10W
R401	1-216-049-00	METAL CHIP	1K	5%	1/10W
R402	1-216-105-00	METAL CHIP	220K	5%	1/10W
R403	1-216-055-00	METAL CHIP	1.8K	5%	1/10W
R404	1-216-075-00	METAL CHIP	12K	5%	1/10W
R405	1-216-043-00	METAL CHIP	560	5%	1/10W
R406	1-216-073-00	METAL CHIP	10K	5%	1/10W
R407	1-216-043-00	METAL CHIP	560	5%	1/10W
R408	1-216-073-00	METAL CHIP	10K	5%	1/10W
R409	1-216-097-00	METAL CHIP	100K	5%	1/10W
R411	1-216-105-00	METAL CHIP	220K	5%	1/10W
R412	1-216-055-00	METAL CHIP	1.8K	5%	1/10W
R413	1-216-075-00	METAL CHIP	12K	5%	1/10W
R414	1-216-043-00	METAL CHIP	560	5%	1/10W
R415	1-216-073-00	METAL CHIP	10K	5%	1/10W
R416	1-216-043-00	METAL CHIP	560	5%	1/10W
R417	1-216-073-00	METAL CHIP	10K	5%	1/10W
R418	1-216-097-00	METAL CHIP	100K	5%	1/10W
R421	1-216-031-00	METAL CHIP	180	5%	1/10W
R422	1-216-041-00	METAL CHIP	470	5%	1/10W
R423	1-216-105-00	METAL CHIP	220K	5%	1/10W
R424	1-216-025-00	METAL CHIP	100	5%	1/10W
R425	1-216-031-00	METAL CHIP	180	5%	1/10W
R426	1-216-041-00	METAL CHIP	470	5%	1/10W
R427	1-216-105-00	METAL CHIP	220K	5%	1/10W
R428	1-216-025-00	METAL CHIP	100	5%	1/10W
R429	1-216-031-00	METAL CHIP	180	5%	1/10W
R430	1-216-041-00	METAL CHIP	470	5%	1/10W
R431	1-216-105-00	METAL CHIP	220K	5%	1/10W
R432	1-216-025-00	METAL CHIP	100	5%	1/10W
R433	1-216-031-00	METAL CHIP	180	5%	1/10W

Ref. No.	Part No.	Description			Remarks
R434	1-216-041-00	METAL CHIP	470	5%	1/10W
R435	1-216-105-00	METAL CHIP	220K	5%	1/10W
R436	1-216-025-00	METAL CHIP	100	5%	1/10W
R437	1-216-031-00	METAL CHIP	180	5%	1/10W
R438	1-216-041-00	METAL CHIP	470	5%	1/10W
R439	1-216-105-00	METAL CHIP	220K	5%	1/10W
R440	1-216-025-00	METAL CHIP	100	5%	1/10W
R441	1-216-031-00	METAL CHIP	180	5%	1/10W
R442	1-216-041-00	METAL CHIP	470	5%	1/10W
R443	1-216-105-00	METAL CHIP	220K	5%	1/10W
R444	1-216-025-00	METAL CHIP	100	5%	1/10W
R445	1-216-031-00	METAL CHIP	180	5%	1/10W
R446	1-216-041-00	METAL CHIP	470	5%	1/10W
R447	1-216-105-00	METAL CHIP	220K	5%	1/10W
R448	1-216-025-00	METAL CHIP	100	5%	1/10W
R449	1-216-105-00	METAL CHIP	220K	5%	1/10W
R450	1-216-105-00	METAL CHIP	220K	5%	1/10W
R451	1-216-105-00	METAL CHIP	220K	5%	1/10W
R452	1-216-105-00	METAL CHIP	220K	5%	1/10W
R453	1-216-105-00	METAL CHIP	220K	5%	1/10W
R454	1-216-105-00	METAL CHIP	220K	5%	1/10W
R455	1-216-105-00	METAL CHIP	220K	5%	1/10W

< SWITCH >

S301	1-571-640-21	SWITCH, SLIDE (PGM 1)
S302	1-571-640-21	SWITCH, SLIDE (PGM 2)
S311	1-571-640-21	SWITCH, SLIDE (PLAYER 1)
S312	1-571-640-21	SWITCH, SLIDE (PLAYER 1)
S313	1-571-640-21	SWITCH, SLIDE (PLAYER 2)
S314	1-571-640-21	SWITCH, SLIDE (PLAYER 2)
S315	1-571-640-21	SWITCH, SLIDE (AUX 1)
S316	1-571-640-21	SWITCH, SLIDE (AUX 2)
S317	1-571-640-21	SWITCH, SLIDE (RECORDER)

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* A-7066-124-A RS-62 BOARD, COMPLETE

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(Ref. No. 4,000 Seriese)

< CAPACITOR >

C201	1-164-346-11	CERAMIC CHIP	1uF	16V
C202	1-164-346-11	CERAMIC CHIP	1uF	16V
C203	1-164-346-11	CERAMIC CHIP	1uF	16V
C204	1-164-346-11	CERAMIC CHIP	1uF	16V
C206	1-164-346-11	CERAMIC CHIP	1uF	16V
C208	1-164-346-11	CERAMIC CHIP	1uF	16V
C209	1-164-505-11	CERAMIC CHIP	2.2uF	16V
C210	1-164-505-11	CERAMIC CHIP	2.2uF	16V
C211	1-164-505-11	CERAMIC CHIP	2.2uF	16V
C220	1-164-505-11	CERAMIC CHIP	2.2uF	16V
C221	1-164-505-11	CERAMIC CHIP	2.2uF	16V
C222	1-164-505-11	CERAMIC CHIP	2.2uF	16V
C223	1-164-505-11	CERAMIC CHIP	2.2uF	16V
C224	1-164-505-11	CERAMIC CHIP	2.2uF	16V
C225	1-164-505-11	CERAMIC CHIP	2.2uF	16V
C226	1-164-505-11	CERAMIC CHIP	2.2uF	16V
C227	1-164-505-11	CERAMIC CHIP	2.2uF	16V
C228	1-164-505-11	CERAMIC CHIP	2.2uF	16V
C229	1-164-505-11	CERAMIC CHIP	2.2uF	16V
C230	1-164-505-11	CERAMIC CHIP	2.2uF	16V
C231	1-164-505-11	CERAMIC CHIP	2.2uF	16V

< CONNECTOR >

* CN201	1-569-035-11	CONNECTOR, FPC (ZIF) 30P
CN251	1-565-388-21	CONNECTOR, D-SUB 9P (1-PLAYER REMOTE-2 RS-232C)
CN252	1-565-388-21	CONNECTOR, D-SUB 9P (1-PLAYER REMOTE-2 RS-232C)
CN253	1-565-388-21	CONNECTOR, D-SUB 9P (RECORDER REMOTE RS-232C)
CN254	1-573-005-21	CONNECTOR, D-SUB 9P (1-PLAYER REMOTE-2 RS-422)
CN255	1-573-005-21	CONNECTOR, D-SUB 9P (1-PLAYER REMOTE-2 RS-422)
CN256	1-573-005-21	CONNECTOR, D-SUB 9P (RECORDER REMOTE RS-422)
CN265	1-506-486-11	PIN, CONNECTOR 7P

< DIODE >

D202	8-719-107-15	DIODE	RD18M-B2
D204	8-719-107-15	DIODE	RD18M-B2
D206	8-719-107-15	DIODE	RD18M-B2
D208	8-719-107-15	DIODE	RD18M-B2
D210	8-719-107-15	DIODE	RD18M-B2
D212	8-719-107-15	DIODE	RD18M-B2
D214	8-719-107-15	DIODE	RD18M-B2
D216	8-719-107-15	DIODE	RD18M-B2
D218	8-719-107-15	DIODE	RD18M-B2
D220	8-719-107-15	DIODE	RD18M-B2
D222	8-719-107-15	DIODE	RD18M-B2
D224	8-719-107-15	DIODE	RD18M-B2
D226	8-719-107-15	DIODE	RD18M-B2
D228	8-719-107-15	DIODE	RD18M-B2
D230	8-719-107-15	DIODE	RD18M-B2
D232	8-719-107-15	DIODE	RD18M-B2
D234	8-719-107-15	DIODE	RD18M-B2
D236	8-719-107-15	DIODE	RD18M-B2
D238	8-719-107-15	DIODE	RD18M-B2
D240	8-719-107-15	DIODE	RD18M-B2
D242	8-719-107-15	DIODE	RD18M-B2
D244	8-719-107-15	DIODE	RD18M-B2
D246	8-719-107-15	DIODE	RD18M-B2
D248	8-719-107-15	DIODE	RD18M-B2
D249	8-719-106-44	DIODE	RD9.1M-B2

Ref. No.	Part No.	Description	Remarks
D250	8-719-106-44	DIODE RD9.1M-B2	
D251	8-719-106-44	DIODE RD9.1M-B2	
D252	8-719-106-44	DIODE RD9.1M-B2	
D253	8-719-106-44	DIODE RD9.1M-B2	
D254	8-719-106-44	DIODE RD9.1M-B2	
D255	8-719-106-44	DIODE RD9.1M-B2	
D256	8-719-106-44	DIODE RD9.1M-B2	
D257	8-719-106-44	DIODE RD9.1M-B2	
D258	8-719-106-44	DIODE RD9.1M-B2	
D259	8-719-106-44	DIODE RD9.1M-B2	
D260	8-719-106-44	DIODE RD9.1M-B2	
D261	8-719-106-44	DIODE RD9.1M-B2	
D262	8-719-106-44	DIODE RD9.1M-B2	
D263	8-719-106-44	DIODE RD9.1M-B2	
D264	8-719-106-44	DIODE RD9.1M-B2	
D265	8-719-106-44	DIODE RD9.1M-B2	
D266	8-719-106-44	DIODE RD9.1M-B2	
D267	8-719-106-44	DIODE RD9.1M-B2	
D268	8-719-106-44	DIODE RD9.1M-B2	
D269	8-719-106-44	DIODE RD9.1M-B2	
D270	8-719-106-44	DIODE RD9.1M-B2	
D271	8-719-106-44	DIODE RD9.1M-B2	
D272	8-719-106-44	DIODE RD9.1M-B2	
D273	8-719-106-44	DIODE RD9.1M-B2	
D274	8-719-106-44	DIODE RD9.1M-B2	
D275	8-719-106-44	DIODE RD9.1M-B2	
D276	8-719-106-44	DIODE RD9.1M-B2	
D277	8-719-106-44	DIODE RD9.1M-B2	
D278	8-719-106-44	DIODE RD9.1M-B2	
D279	8-719-106-44	DIODE RD9.1M-B2	
D280	8-719-106-44	DIODE RD9.1M-B2	
D281	8-719-106-44	DIODE RD9.1M-B2	
D282	8-719-106-44	DIODE RD9.1M-B2	
D283	8-719-106-44	DIODE RD9.1M-B2	
D284	8-719-106-44	DIODE RD9.1M-B2	
D285	8-719-106-44	DIODE RD9.1M-B2	
D286	8-719-106-44	DIODE RD9.1M-B2	
D287	8-719-106-44	DIODE RD9.1M-B2	
D288	8-719-106-44	DIODE RD9.1M-B2	
D289	8-719-106-44	DIODE RD9.1M-B2	
D290	8-719-106-44	DIODE RD9.1M-B2	
		< FERRITE BEAD >	
FB201	1-543-775-11	FILTER, EMI	
FB202	1-543-775-11	FILTER, EMI	
FB203	1-543-775-11	FILTER, EMI	
FB204	1-543-775-11	FILTER, EMI	
FB205	1-543-775-11	FILTER, EMI	
FB206	1-543-775-11	FILTER, EMI	
FB207	1-543-775-11	FILTER, EMI	
FB208	1-543-775-11	FILTER, EMI	
FB209	1-543-775-11	FILTER, EMI	
FB210	1-543-775-11	FILTER, EMI	
FB211	1-543-775-11	FILTER, EMI	
FB212	1-543-775-11	FILTER, EMI	
FB213	1-543-775-11	FILTER, EMI	
FB214	1-543-775-11	FILTER, EMI	
FB215	1-543-775-11	FILTER, EMI	
FB216	1-543-775-11	FILTER, EMI	
FB217	1-543-775-11	FILTER, EMI	
FB218	1-543-775-11	FILTER, EMI	
FB219	1-543-775-11	FILTER, EMI	
FB220	1-543-775-11	FILTER, EMI	
FB221	1-543-775-11	FILTER, EMI	
FB222	1-543-775-11	FILTER, EMI	
FB223	1-543-775-11	FILTER, EMI	
FB224	1-543-775-11	FILTER, EMI	
FB225	1-543-775-11	FILTER, EMI	
FB226	1-543-775-11	FILTER, EMI	
FB228	1-543-775-11	FILTER, EMI	
FB229	1-543-775-11	FILTER, EMI	
FB230	1-543-775-11	FILTER, EMI	
FB231	1-543-775-11	FILTER, EMI	
FB232	1-543-775-11	FILTER, EMI	
FB234	1-543-775-11	FILTER, EMI	
FB235	1-543-775-11	FILTER, EMI	
FB236	1-543-775-11	FILTER, EMI	
FB237	1-543-775-11	FILTER, EMI	
FB238	1-543-775-11	FILTER, EMI	
FB239	1-543-775-11	FILTER, EMI	
FB240	1-543-775-11	FILTER, EMI	
FB242	1-543-775-11	FILTER, EMI	
FB243	1-543-775-11	FILTER, EMI	
FB244	1-543-775-11	FILTER, EMI	
FB245	1-543-775-11	FILTER, EMI	
FB246	1-543-775-11	FILTER, EMI	
FB247	1-543-775-11	FILTER, EMI	
FB248	1-543-775-11	FILTER, EMI	
FB249	1-543-775-11	FILTER, EMI	
FB250	1-543-775-11	FILTER, EMI	
FB251	1-543-775-11	FILTER, EMI	
FB252	1-543-775-11	FILTER, EMI	
FB253	1-543-775-11	FILTER, EMI	
FB254	1-543-775-11	FILTER, EMI	
FB255	1-543-775-11	FILTER, EMI	
FB271	1-412-390-21	INDUCTOR CHIP 0uH	
FB272	1-412-390-21	INDUCTOR CHIP 0uH	
FB273	1-412-390-21	INDUCTOR CHIP 0uH	

Ref. No.	Part No.	Description	Remarks
FB274	1-412-390-21	INDUCTOR CHIP 0uH	
FB275	1-412-390-21	INDUCTOR CHIP 0uH	
FB276	1-412-390-21	INDUCTOR CHIP 0uH	
FB277	1-412-390-21	INDUCTOR CHIP 0uH	
FB278	1-412-390-21	INDUCTOR CHIP 0uH	
FB279	1-412-390-21	INDUCTOR CHIP 0uH	
FB280	1-412-390-21	INDUCTOR CHIP 0uH	
FB281	1-412-390-21	INDUCTOR CHIP 0uH	
FB282	1-412-390-21	INDUCTOR CHIP 0uH	
FB283	1-412-390-21	INDUCTOR CHIP 0uH	
FB284	1-412-390-21	INDUCTOR CHIP 0uH	
FB285	1-412-390-21	INDUCTOR CHIP 0uH	
FB286	1-412-390-21	INDUCTOR CHIP 0uH	
FB287	1-412-390-21	INDUCTOR CHIP 0uH	
FB288	1-412-390-21	INDUCTOR CHIP 0uH	
FB289	1-412-390-21	INDUCTOR CHIP 0uH	
FB290	1-412-390-21	INDUCTOR CHIP 0uH	
FB291	1-412-390-21	INDUCTOR CHIP 0uH	
		< IC >	
IC202	8-759-011-65	IC MC74HC4053F (RS-232C/422 SELECT SWITCH)	
IC203	8-759-011-65	IC MC74HC4053F (RS-232C/422 SELECT SWITCH)	
IC204	8-759-923-65	IC AM26LS31CNS (RS-422 DRIVER)	
IC206	8-759-923-64	IC AM26LS32ACNS (RS-422 DRIVER)	
IC207	8-759-092-85	IC MAX241CWI-T(RS-232C DRIVER/RECEIVER)	
IC208	8-759-092-85	IC MAX241CWI-T(RS-232C DRIVER/RECEIVER)	
IC209	8-759-092-85	IC MAX241CWI-T(RS-232C DRIVER/RECEIVER)	
		< COIL >	
L201	1-412-028-11	INDUCTOR CHIP 4.7uH	
		< RESISTOR >	
R222	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R223	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R224	1-216-077-00	METAL CHIP 15K 5% 1/10W	
R225	1-216-089-91	METAL GLAZE 47K 5% 1/10W	
R226	1-216-089-91	METAL GLAZE 47K 5% 1/10W	
R227	1-216-089-91	METAL GLAZE 47K 5% 1/10W	
R228	1-216-089-91	METAL GLAZE 47K 5% 1/10W	
R229	1-216-089-91	METAL GLAZE 47K 5% 1/10W	
R230	1-216-089-91	METAL GLAZE 47K 5% 1/10W	
R235	1-216-053-00	METAL CHIP 1.5K 5% 1/10W	
R236	1-216-182-00	METAL GLAZE 220 5% 1/8W	
R237	1-216-053-00	METAL CHIP 1.5K 5% 1/10W	
R238	1-216-053-00	METAL CHIP 1.5K 5% 1/10W	
R239	1-216-053-00	METAL CHIP 1.5K 5% 1/10W	
R240	1-216-182-00	METAL GLAZE 220 5% 1/8W	

Ref. No.	Part No.	Description	Remarks
R241	1-216-053-00	METAL CHIP 1.5K 5% 1/10W	
R242	1-216-182-00	METAL GLAZE 220 5% 1/8W	
R243	1-216-053-00	METAL CHIP 1.5K 5% 1/10W	
R244	1-216-053-00	METAL CHIP 1.5K 5% 1/10W	
R245	1-216-182-00	METAL GLAZE 220 5% 1/8W	
R246	1-216-053-00	METAL CHIP 1.5K 5% 1/10W	
R247	1-216-182-00	METAL GLAZE 220 5% 1/8W	
R248	1-216-182-00	METAL GLAZE 220 5% 1/8W	
R249	1-216-182-00	METAL GLAZE 220 5% 1/8W	
R250	1-216-182-00	METAL GLAZE 220 5% 1/8W	
		< SWITCH >	
S201	1-572-442-11	SWITCH, SLIDE (RECORDER REMOTE)	
S202	1-572-442-11	SWITCH, SLIDE (1-PLAYER REMOTE-2)	
**********			
*	A-7066-126-A	VI-126 (P) BOARD, COMPLETE **********	(Ref. No. 6,000 Seriese)
		< CAPACITOR >	
C110	1-126-394-11	ELECT CHIP 10uF 20% 16V	
C111	1-126-394-11	ELECT CHIP 10uF 20% 16V	
C112	1-164-156-11	CERAMIC CHIP 0.1uF 25V	
C113	1-164-237-11	CERAMIC CHIP 16PF 5% 50V	
C114	1-163-110-00	CERAMIC CHIP 51PF 5% 50V	
C115	1-162-916-11	CERAMIC CHIP 12PF 5% 50V	
C116	1-162-916-11	CERAMIC CHIP 12PF 5% 50V	
C117	1-164-156-11	CERAMIC CHIP 0.1uF 25V	
C118	1-164-156-11	CERAMIC CHIP 0.1uF 25V	
C119	1-126-394-11	ELECT CHIP 10uF 20% 16V	
C120	1-164-005-11	CERAMIC CHIP 0.47uF 25V	
C121	1-126-394-11	ELECT CHIP 10uF 20% 16V	
C122	1-126-394-11	ELECT CHIP 10uF 20% 16V	
C123	1-164-156-11	CERAMIC CHIP 0.1uF 25V	
C152	1-126-394-11	ELECT CHIP 10uF 20% 16V	
C153	1-164-156-11	CERAMIC CHIP 0.1uF 25V	
C154	1-162-970-11	CERAMIC CHIP 0.01uF 10% 25V	
C155	1-164-156-11	CERAMIC CHIP 0.1uF 25V	
C156	1-164-156-11	CERAMIC CHIP 0.1uF 25V	
C157	1-164-156-11	CERAMIC CHIP 0.1uF 25V	
C158	1-126-206-11	ELECT CHIP 100uF 20% 6.3V	
C159	1-162-970-11	CERAMIC CHIP 0.01uF 10% 25V	
C160	1-164-156-11	CERAMIC CHIP 0.1uF 25V	
C161	1-164-156-11	CERAMIC CHIP 0.1uF 25V	
C162	1-126-206-11	ELECT CHIP 100uF 20% 6.3V	
C163	1-162-970-11	CERAMIC CHIP 0.01uF 10% 25V	
C164	1-164-217-11	CERAMIC CHIP 150PF 5% 50V	
C165	1-126-394-11	ELECT CHIP 10uF 20% 16V	
C166	1-164-156-11	CERAMIC CHIP 0.1uF 25V	
C167	1-126-394-11	ELECT CHIP 10uF 20% 16V	

Ref. No.	Part No.	Description			Remarks
C168	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C169	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C170	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
C171	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C172	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C173	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C174	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C175	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C176	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C177	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C178	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C179	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C180	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C181	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C191	1-128-065-11	ELECT	68uF	20%	10V
C192	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C193	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C194	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C200	1-126-394-11	ELECT CHIP	10uF	20%	16V
C201	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C202	1-126-394-11	ELECT CHIP	10uF	20%	16V
C203	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C204	1-126-394-11	ELECT CHIP	10uF	20%	16V
C205	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C206	1-126-394-11	ELECT CHIP	10uF	20%	16V
C207	1-126-394-11	ELECT CHIP	10uF	20%	16V
C208	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C209	1-126-394-11	ELECT CHIP	10uF	20%	16V
C210	1-126-394-11	ELECT CHIP	10uF	20%	16V
C211	1-126-394-11	ELECT CHIP	10uF	20%	16V
C212	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C213	1-164-237-11	CERAMIC CHIP	16PF	5%	50V
C214	1-163-110-00	CERAMIC CHIP	51PF	5%	50V
C215	1-162-916-11	CERAMIC CHIP	12PF	5%	50V
C216	1-162-916-11	CERAMIC CHIP	12PF	5%	50V
C217	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C218	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C219	1-126-394-11	ELECT CHIP	10uF	20%	16V
C220	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C221	1-126-394-11	ELECT CHIP	10uF	20%	16V
C222	1-126-394-11	ELECT CHIP	10uF	20%	16V
C223	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C224	1-126-394-11	ELECT CHIP	10uF	20%	16V
C225	1-126-394-11	ELECT CHIP	10uF	20%	16V
C226	1-126-394-11	ELECT CHIP	10uF	20%	16V
C227	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C228	1-126-394-11	ELECT CHIP	10uF	20%	16V
C229	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C230	1-126-394-11	ELECT CHIP	10uF	20%	16V
C231	1-126-394-11	ELECT CHIP	10uF	20%	16V

Ref. No.	Part No.	Description			Remarks
C232	1-126-394-11	ELECT CHIP	10uF	20%	16V
C233	1-126-394-11	ELECT CHIP	10uF	20%	16V
C234	1-126-394-11	ELECT CHIP	10uF	20%	16V
C235	1-126-394-11	ELECT CHIP	10uF	20%	16V
C236	1-126-394-11	ELECT CHIP	10uF	20%	16V
C237	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C238	1-126-394-11	ELECT CHIP	10uF	20%	16V
C239	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C240	1-126-394-11	ELECT CHIP	10uF	20%	16V
C241	1-126-394-11	ELECT CHIP	10uF	20%	16V
C242	1-126-394-11	ELECT CHIP	10uF	20%	16V
C243	1-126-394-11	ELECT CHIP	10uF	20%	16V
C244	1-126-394-11	ELECT CHIP	10uF	20%	16V
C245	1-126-394-11	ELECT CHIP	10uF	20%	16V
C246	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C247	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C248	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C249	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C250	1-126-394-11	ELECT CHIP	10uF	20%	16V
C251	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C252	1-126-394-11	ELECT CHIP	10uF	20%	16V
C253	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C254	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C255	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C256	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C257	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C258	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C259	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C260	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C261	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C262	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C263	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C264	1-164-217-11	CERAMIC CHIP	150PF	5%	50V
C265	1-126-394-11	ELECT CHIP	10uF	20%	16V
C266	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C267	1-126-394-11	ELECT CHIP	10uF	20%	16V
C268	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C269	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C270	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
C271	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C272	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C273	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C274	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C275	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C276	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C277	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C278	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C279	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C280	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C281	1-164-156-11	CERAMIC CHIP	0.1uF		25V

Ref. No.	Part No.	Description			Remarks
C282	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C283	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C284	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C285	1-126-394-11	ELECT CHIP	10uF	20%	16V
C286	1-162-916-11	CERAMIC CHIP	12PF	5%	50V
C287	1-126-394-11	ELECT CHIP	10uF	20%	16V
C288	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C289	1-126-394-11	ELECT CHIP	10uF	20%	16V
C290	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C291	1-128-065-11	ELECT	68uF	20%	10V
C292	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C293	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C294	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C295	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C296	1-126-394-11	ELECT CHIP	10uF	20%	16V
C297	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C298	1-128-065-11	ELECT	68uF	20%	10V
C299	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C300	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C811	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C812	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C813	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C814	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V

< CONNECTOR >

CN101	1-506-491-11	PIN, CONNECTOR 12P
CN102	1-580-722-11	CONNECTOR, BOARD TO BOARD 28P
CN103	1-580-722-11	CONNECTOR, BOARD TO BOARD 28P
CN104	1-506-485-11	PIN, CONNECTOR 6P
CN105	1-506-485-11	PIN, CONNECTOR 6P

< FERRITE BEAD >

FB101	1-543-813-21	FILTER, EMI
FB151	1-543-813-21	FILTER, EMI
FB191	1-543-813-21	FILTER, EMI
FB200	1-543-813-21	FILTER, EMI
FB201	1-543-813-21	FILTER, EMI
FB204	1-543-813-21	FILTER, EMI
FB209	1-543-813-21	FILTER, EMI
FB210	1-543-813-21	FILTER, EMI
FB251	1-543-813-21	FILTER, EMI
FB291	1-543-813-21	FILTER, EMI

< FILTER >

FL101	1-239-593-11	FILTER, LC
FL201	1-239-593-11	FILTER, LC

< IC >

IC101	8-752-052-58	IC	CXA1410M (INPUT SELECT)
IC104	8-759-011-64	IC	MC74HC4052F (SELECTOR)
IC105	8-752-053-21	IC	CXA1211M (VCA)
IC106	8-752-039-34	IC	CXA1208Q (ACC & ACK)
IC107	8-759-710-82	IC	NJM2406F (COMP)
IC191	8-759-822-XX	IC	L88MS05T-FA-TL (+5V REG)
IC201	8-752-052-58	IC	CXA1410M (INPUT SELECT)
IC204	8-759-011-64	IC	MC74HC4052F (SELECTOR)
IC205	8-752-053-21	IC	CXA1211M (VCA)
IC206	8-752-039-34	IC	CXA1208Q (ACC & ACK)
IC207	8-759-710-82	IC	NJM2406F (COMP)
IC208	8-757-991-00	IC	CX7991 (ADDRESS DECODER(SERIAL TO PARLLEL))
IC209	8-757-991-00	IC	CX7991 (ADDRESS DECODER(SERIAL TO PARLLEL))
IC210	8-752-052-58	IC	CXA1410M (INPUT SELECT)
IC211	8-759-822-XX	IC	L88MS05T-FA-TL (+5V REG)
IC291	8-759-822-XX	IC	L88MS05T-FA-TL (+5V REG)

< COIL >

L101	1-410-388-31	INDUCTOR CHIP 39uH
L102	1-410-388-31	INDUCTOR CHIP 39uH
L103	1-410-658-31	INDUCTOR CHIP 220uH
L105	1-410-658-31	INDUCTOR CHIP 220uH
L106	1-410-658-31	INDUCTOR CHIP 220uH
L107	1-410-658-31	INDUCTOR CHIP 220uH
L201	1-410-388-31	INDUCTOR CHIP 39uH
L202	1-410-388-31	INDUCTOR CHIP 39uH
L203	1-410-658-31	INDUCTOR CHIP 220uH
L205	1-410-658-31	INDUCTOR CHIP 220uH
L206	1-410-658-31	INDUCTOR CHIP 220uH
L207	1-410-658-31	INDUCTOR CHIP 220uH
L208	1-410-658-31	INDUCTOR CHIP 220uH

< TRANSISTOR >

Q101	8-729-120-28	TRANSISTOR	2SC1623-L5L6
Q102	8-729-120-28	TRANSISTOR	2SC1623-L5L6
Q103	8-729-120-28	TRANSISTOR	2SC1623-L5L6
Q104	8-729-120-28	TRANSISTOR	2SC1623-L5L6
Q105	8-729-216-22	TRANSISTOR	2SA1162-G
Q106	8-729-120-28	TRANSISTOR	2SC1623-L5L6
Q109	8-729-120-28	TRANSISTOR	2SC1623-L5L6
Q110	8-729-120-28	TRANSISTOR	2SC1623-L5L6
Q111	8-729-120-28	TRANSISTOR	2SC1623-L5L6
Q112	8-729-120-28	TRANSISTOR	2SC1623-L5L6
Q113	8-729-120-28	TRANSISTOR	2SC1623-L5L6
Q114	8-729-120-28	TRANSISTOR	2SC1623-L5L6
Q115	8-729-120-28	TRANSISTOR	2SC1623-L5L6
Q116	8-729-120-28	TRANSISTOR	2SC1623-L5L6
Q200	8-729-120-28	TRANSISTOR	2SC1623-L5L6
Q201	8-729-120-28	TRANSISTOR	2SC1623-L5L6
Q202	8-729-120-28	TRANSISTOR	2SC1623-L5L6
Q203	8-729-120-28	TRANSISTOR	2SC1623-L5L6
Q204	8-729-120-28	TRANSISTOR	2SC1623-L5L6
Q205	8-729-216-22	TRANSISTOR	2SA1162-G

Ref. No.	Part No.	Description				Remarks
Q206	8-729-120-28	TRANSISTOR	2SC1623-L5L6			
Q207	8-729-120-28	TRANSISTOR	2SC1623-L5L6			
Q208	8-729-120-28	TRANSISTOR	2SC1623-L5L6			
Q209	8-729-120-28	TRANSISTOR	2SC1623-L5L6			
Q210	8-729-120-28	TRANSISTOR	2SC1623-L5L6			
Q211	8-729-120-28	TRANSISTOR	2SC1623-L5L6			
Q212	8-729-120-28	TRANSISTOR	2SC1623-L5L6			
Q213	8-729-120-28	TRANSISTOR	2SC1623-L5L6			
Q214	8-729-120-28	TRANSISTOR	2SC1623-L5L6			
Q215	8-729-120-28	TRANSISTOR	2SC1623-L5L6			
Q216	8-729-120-28	TRANSISTOR	2SC1623-L5L6			
		< RESISTOR >				
R101	1-216-817-11	METAL CHIP	470	5%	1/16W	
R102	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R103	1-218-847-11	METAL CHIP	1K	0.50%	1/16W	
R104	1-218-847-11	METAL CHIP	1K	0.50%	1/16W	
R105	1-218-847-11	METAL CHIP	1K	0.50%	1/16W	
R106	1-218-859-11	METAL CHIP	3.3K	0.50%	1/16W	
R107	1-218-859-11	METAL CHIP	3.3K	0.50%	1/16W	
R108	1-218-852-11	METAL CHIP	1.6K	0.50%	1/16W	
R109	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R110	1-216-857-11	METAL CHIP	1M	5%	1/16W	
R111	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R112	1-216-817-11	METAL CHIP	470	5%	1/16W	
R113	1-218-857-11	METAL CHIP	2.7K	0.50%	1/16W	
R114	1-218-847-11	METAL CHIP	1K	0.50%	1/16W	
R115	1-216-817-11	METAL CHIP	470	5%	1/16W	
R116	1-216-817-11	METAL CHIP	470	5%	1/16W	
R133	1-218-859-11	METAL CHIP	3.3K	0.50%	1/16W	
R134	1-218-857-11	METAL CHIP	2.7K	0.50%	1/16W	
R135	1-218-840-11	METAL GLAZE	510	0.50%	1/16W	
R136	1-218-859-11	METAL CHIP	3.3K	0.50%	1/16W	
R137	1-218-857-11	METAL CHIP	2.7K	0.50%	1/16W	
R138	1-218-840-11	METAL GLAZE	510	0.50%	1/16W	
R139	1-218-840-11	METAL GLAZE	510	0.50%	1/16W	
R140	1-218-839-11	METAL GLAZE	470	0.50%	1/16W	
R141	1-218-853-11	METAL CHIP	1.8K	0.50%	1/16W	
R142	1-218-859-11	METAL CHIP	3.3K	0.50%	1/16W	
R143	1-218-852-11	METAL CHIP	1.6K	0.50%	1/16W	
R144	1-216-817-11	METAL CHIP	470	5%	1/16W	
R145	1-218-840-11	METAL GLAZE	510	0.50%	1/16W	
R146	1-218-840-11	METAL GLAZE	510	0.50%	1/16W	
R147	1-218-847-11	METAL CHIP	1K	0.50%	1/16W	
R148	1-218-859-11	METAL CHIP	3.3K	0.50%	1/16W	
R149	1-218-852-11	METAL CHIP	1.6K	0.50%	1/16W	
R150	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R151	1-216-833-11	METAL CHIP	10K	5%	1/16W	

Ref. No.	Part No.	Description				Remarks
R152	1-216-827-11	METAL CHIP	3.3K	5%	1/16W	
R153	1-216-827-11	METAL CHIP	3.3K	5%	1/16W	
R154	1-216-845-11	METAL CHIP	100K	5%	1/16W	
R156	1-216-827-11	METAL CHIP	3.3K	5%	1/16W	
R157	1-216-827-11	METAL CHIP	3.3K	5%	1/16W	
R158	1-216-830-11	METAL CHIP	5.6K	5%	1/16W	
R159	1-216-817-11	METAL CHIP	470	5%	1/16W	
R160	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R161	1-218-484-11	METAL GLAZE	750	5%	1/16W	
R162	1-216-814-11	METAL CHIP	270	5%	1/16W	
R163	1-218-844-11	METAL CHIP	750	0.50%	1/16W	
R164	1-218-851-11	METAL CHIP	1.5K	0.50%	1/16W	
R165	1-218-863-11	METAL CHIP	4.7K	0.50%	1/16W	
R166	1-218-879-11	METAL CHIP	22K	0.50%	1/16W	
R167	1-218-852-11	METAL CHIP	1.6K	0.50%	1/16W	
R168	1-218-859-11	METAL CHIP	3.3K	0.50%	1/16W	
R169	1-216-817-11	METAL CHIP	470	5%	1/16W	
R170	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	
R191	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R192	1-216-849-11	METAL CHIP	220K	5%	1/16W	
R200	1-216-817-11	METAL CHIP	470	5%	1/16W	
R201	1-216-817-11	METAL CHIP	470	5%	1/16W	
R202	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R203	1-218-847-11	METAL CHIP	1K	0.50%	1/16W	
R204	1-218-847-11	METAL CHIP	1K	0.50%	1/16W	
R205	1-218-847-11	METAL CHIP	1K	0.50%	1/16W	
R206	1-218-859-11	METAL CHIP	3.3K	0.50%	1/16W	
R207	1-218-859-11	METAL CHIP	3.3K	0.50%	1/16W	
R208	1-218-852-11	METAL CHIP	1.6K	0.50%	1/16W	
R209	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R210	1-216-857-11	METAL CHIP	1M	5%	1/16W	
R211	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R212	1-216-817-11	METAL CHIP	470	5%	1/16W	
R213	1-218-857-11	METAL CHIP	2.7K	0.50%	1/16W	
R214	1-218-847-11	METAL CHIP	1K	0.50%	1/16W	
R215	1-216-817-11	METAL CHIP	470	5%	1/16W	
R216	1-216-817-11	METAL CHIP	470	5%	1/16W	
R217	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R218	1-218-857-11	METAL CHIP	2.7K	0.50%	1/16W	
R219	1-216-817-11	METAL CHIP	470	5%	1/16W	
R220	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R221	1-218-855-11	METAL CHIP	2.2K	0.50%	1/16W	
R222	1-218-847-11	METAL CHIP	1K	0.50%	1/16W	
R223	1-218-859-11	METAL CHIP	3.3K	0.50%	1/16W	
R224	1-218-852-11	METAL CHIP	1.6K	0.50%	1/16W	
R225	1-218-859-11	METAL CHIP	3.3K	0.50%	1/16W	
R226	1-216-817-11	METAL CHIP	470	5%	1/16W	
R227	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R228	1-216-849-11	METAL CHIP	220K	5%	1/16W	
R233	1-218-859-11	METAL CHIP	3.3K	0.50%	1/16W	

Ref. No.	Part No.	Description			Remarks
R234	1-218-857-11	METAL CHIP	2.7K	0.50%	1/16W
R235	1-218-840-11	METAL GLAZE	510	0.50%	1/16W
R236	1-218-859-11	METAL CHIP	3.3K	0.50%	1/16W
R237	1-218-857-11	METAL CHIP	2.7K	0.50%	1/16W
R238	1-218-840-11	METAL GLAZE	510	0.50%	1/16W
R239	1-218-840-11	METAL GLAZE	510	0.50%	1/16W
R240	1-218-839-11	METAL GLAZE	470	0.50%	1/16W
R241	1-218-853-11	METAL CHIP	1.8K	0.50%	1/16W
R242	1-218-859-11	METAL CHIP	3.3K	0.50%	1/16W
R243	1-218-852-11	METAL CHIP	1.6K	0.50%	1/16W
R244	1-216-817-11	METAL CHIP	470	5%	1/16W
R245	1-218-840-11	METAL GLAZE	510	0.50%	1/16W
R246	1-218-840-11	METAL GLAZE	510	0.50%	1/16W
R247	1-218-847-11	METAL CHIP	1K	0.50%	1/16W
R248	1-218-859-11	METAL CHIP	3.3K	0.50%	1/16W
R249	1-218-852-11	METAL CHIP	1.6K	0.50%	1/16W
R250	1-216-821-11	METAL CHIP	1K	5%	1/16W
R251	1-216-833-11	METAL CHIP	10K	5%	1/16W
R252	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R253	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R254	1-216-845-11	METAL CHIP	100K	5%	1/16W
R256	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R257	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R258	1-216-830-11	METAL CHIP	5.6K	5%	1/16W
R259	1-216-817-11	METAL CHIP	470	5%	1/16W
R260	1-216-833-11	METAL CHIP	10K	5%	1/16W
R261	1-218-484-11	METAL GLAZE	750	5%	1/16W
R262	1-216-814-11	METAL CHIP	270	5%	1/16W
R263	1-218-844-11	METAL CHIP	750	0.50%	1/16W
R264	1-218-851-11	METAL CHIP	1.5K	0.50%	1/16W
R265	1-218-863-11	METAL CHIP	4.7K	0.50%	1/16W
R266	1-218-879-11	METAL CHIP	22K	0.50%	1/16W
R267	1-218-852-11	METAL CHIP	1.6K	0.50%	1/16W
R268	1-218-859-11	METAL CHIP	3.3K	0.50%	1/16W
R269	1-216-817-11	METAL CHIP	470	5%	1/16W
R270	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R271	1-216-813-11	METAL CHIP	220	5%	1/16W
R272	1-216-813-11	METAL CHIP	220	5%	1/16W
R273	1-216-813-11	METAL CHIP	220	5%	1/16W
R274	1-216-813-11	METAL CHIP	220	5%	1/16W
R275	1-216-813-11	METAL CHIP	220	5%	1/16W
R276	1-216-813-11	METAL CHIP	220	5%	1/16W
R277	1-216-813-11	METAL CHIP	220	5%	1/16W
R278	1-216-813-11	METAL CHIP	220	5%	1/16W
R279	1-216-813-11	METAL CHIP	220	5%	1/16W
R280	1-216-813-11	METAL CHIP	220	5%	1/16W
R281	1-216-813-11	METAL CHIP	220	5%	1/16W
R282	1-216-813-11	METAL CHIP	220	5%	1/16W
R283	1-216-813-11	METAL CHIP	220	5%	1/16W
R284	1-216-813-11	METAL CHIP	220	5%	1/16W

Ref. No.	Part No.	Description			Remarks
R285	1-216-813-11	METAL CHIP	220	5%	1/16W
R286	1-216-813-11	METAL CHIP	220	5%	1/16W
R287	1-216-813-11	METAL CHIP	220	5%	1/16W
R288	1-216-813-11	METAL CHIP	220	5%	1/16W
R289	1-216-813-11	METAL CHIP	220	5%	1/16W
R290	1-216-813-11	METAL CHIP	220	5%	1/16W
R291	1-216-833-11	METAL CHIP	10K	5%	1/16W
R292	1-216-849-11	METAL CHIP	220K	5%	1/16W
R293	1-216-813-11	METAL CHIP	220	5%	1/16W
R294	1-216-813-11	METAL CHIP	220	5%	1/16W
R295	1-216-813-11	METAL CHIP	220	5%	1/16W
R811	1-218-827-11	METAL GLAZE	150	0.50%	1/16W
R812	1-218-827-11	METAL GLAZE	150	0.50%	1/16W
R813	1-218-827-11	METAL GLAZE	150	0.50%	1/16W
R814	1-218-827-11	METAL GLAZE	150	0.50%	1/16W
R815	1-218-827-11	METAL GLAZE	150	0.50%	1/16W
R816	1-218-827-11	METAL GLAZE	150	0.50%	1/16W
R817	1-218-827-11	METAL GLAZE	150	0.50%	1/16W
R818	1-218-827-11	METAL GLAZE	150	0.50%	1/16W
R819	1-218-827-11	METAL GLAZE	150	0.50%	1/16W
R820	1-218-827-11	METAL GLAZE	150	0.50%	1/16W
R821	1-218-827-11	METAL GLAZE	150	0.50%	1/16W
R822	1-218-827-11	METAL GLAZE	150	0.50%	1/16W
R823	1-218-827-11	METAL GLAZE	150	0.50%	1/16W
R824	1-218-827-11	METAL GLAZE	150	0.50%	1/16W
R825	1-218-827-11	METAL GLAZE	150	0.50%	1/16W
R826	1-218-827-11	METAL GLAZE	150	0.50%	1/16W
R827	1-218-827-11	METAL GLAZE	150	0.50%	1/16W
R828	1-218-827-11	METAL GLAZE	150	0.50%	1/16W
R829	1-218-827-11	METAL GLAZE	150	0.50%	1/16W
R830	1-218-827-11	METAL GLAZE	150	0.50%	1/16W
R831	1-218-827-11	METAL GLAZE	150	0.50%	1/16W
R832	1-218-827-11	METAL GLAZE	150	0.50%	1/16W
R833	1-218-827-11	METAL GLAZE	150	0.50%	1/16W
R834	1-218-827-11	METAL GLAZE	150	0.50%	1/16W

< VIBRATOR >

X101	1-579-366-11	VIBRATOR, CRYSTAL
X201	1-579-366-11	VIBRATOR, CRYSTAL

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⚠	1-413-954-11	POWER BLOCK	
		**********	
			(Ref.No.9,000 Seriese)
⚠	1-533-225-11	FUSE CLIP	

< CAPACITOR >

⚠	C001	9-907-314-01	FILM	0.47uF	250V
⚠	C002	9-906-821-01	CERAMIC	100PF	
⚠	C003	9-906-821-01	CERAMIC	100PF	
⚠	C004	9-907-314-01	FILM	0.47uF	250V
	C005	1-136-153-00	FILM	0.01uF 5%	50V

POWER BLOCK

Ref. No.	Part No.	Description			Remarks
C006	1-128-195-11	ELECT	39uF	20%	25V
C007	9-906-823-01	ELECT	680uF		200V
C008	9-906-823-01	ELECT	680uF		200V
C009	9-907-315-01	ELECT	100uF	20%	50V
C010	1-107-518-11	ELECT	39uF	20%	50V
C011	1-136-165-00	FILM	0.1uF	5%	50V
C012	1-130-500-11	FILM	470PF		
C013	1-107-427-11	CERAMIC	0.001uF	10%	1KV
C014	1-107-427-11	CERAMIC	0.001uF	10%	1KV
C015	9-906-824-01	ELECT	180uF		35V
C016	1-124-510-11	ELECT	220uF	20%	35V
C017	1-161-485-00	CERAMIC	0.1uF	Z%	50V
C018	1-107-427-11	CERAMIC	0.001uF	10%	1KV
C019	1-107-427-11	CERAMIC	0.001uF	10%	1KV
C020	1-124-539-11	ELECT	330uF	20%	35V
C021	1-124-539-11	ELECT	330uF	20%	35V
C022	1-128-195-11	ELECT	39uF	20%	25V
C023	1-124-510-11	ELECT	220uF	20%	35V
C024	1-161-485-11	CERAMIC	0.1uF	Z%	50V
C025	1-161-485-11	CERAMIC	0.1uF	Z%	50V
C026	9-906-825-01	FILM	4700PF		250V
C027	9-906-825-01	FILM	4700PF		250V
C028	1-124-510-11	ELECT	220uF	20%	35V
C029	1-124-942-11	ELECT	180uF	20%	10V
C030	1-161-485-11	CERAMIC	0.1uF	Z%	50V
C031	1-124-942-11	ELECT	180uF	20%	10V
C032	1-161-485-11	CERAMIC	0.1uF	Z%	50V
C033	9-906-826-01	FILM	0.01uF		250V
C034	9-906-826-01	FILM	0.01uF		250V
C035	1-124-568-00	ELECT	4700uF	20%	10V
C036	1-124-567-00	ELECT	1200uF	20%	10V
C037	1-161-485-11	CERAMIC	0.1uF	Z%	50V
C038	9-906-827-01	ELECT	39uF		35V
C039	9-906-827-01	ELECT	39uF		35V
C040	9-906-828-01	ELECT	1uF		50V
C042	1-136-165-00	FILM	0.1uF	5%	50V
C100	9-906-830-01	CERAMIC	2200PF		
		< CONNECTOR >			
CN001	9-906-841-01	CONNECTOR 3P			
CN002	1-564-030-00	CONNECTOR 5P			
CN003	1-564-033-00	CONNECTOR 8P			
		< AC INLET >			
⚠CNJ001	9-906-840-01	AC INLET			
		< CRYSTAL >			
CR001	9-906-808-01	TRIAC			

Ref. No.	Part No.	Description	Remarks
		< DIODE >	
D001	8-719-500-58	DIODE D3SB60	
D002	8-719-951-30	DIODE ERA91-02	
D003	8-719-971-20	DIODE ERC38-06	
D004	8-719-971-20	DIODE ERC38-06	
D005	8-719-951-30	DIODE ERA91-02	
D006	8-719-951-30	DIODE ERA91-02	
D007	8-719-920-67	DIODE ERC91-02	
D008	8-719-920-67	DIODE ERC91-02	
D009	8-719-200-02	DIODE 10E-2	
D010	8-719-200-02	DIODE 10E-2	
D011	9-906-807-01	DIODE ERC90M-02	
D012	9-906-807-01	DIODE ERC90M-02	
D013	8-719-200-02	DIODE 10E-2	
D014	8-719-200-02	DIODE 10E-2	
D015	8-719-200-02	DIODE 10E-2	
D016	8-719-200-02	DIODE 10E-2	
D017	8-719-971-00	DIODE ERAC85M-009	
D018	8-719-200-02	DIODE 10E-2	
D019	8-719-200-02	DIODE 10E-2	
D020	8-719-200-02	DIODE 10E-2	
D021	8-719-200-02	DIODE 10E-2	
D022	8-719-992-35	DIODE ESAD83M-004	
D023	8-719-911-19	DIODE 1SS119	
ZD001	8-719-160-80	DIODE RD27FB2	
ZD002	8-719-160-88	DIODE RD33FB3	
ZD003	8-719-109-51	DIODE RD2.0ESAB2	
ZD004	8-719-109-93	DIODE RD6.2ESAB2	
ZD005	8-719-110-88	DIODE RD39ESB2	
		< FUSE >	
⚠F001	1-576-133-11	FUSE 3.15A 250V	
⚠F001	9-906-837-01	FUSE CLIP	
		< HIC >	
HIC001	9-906-811-01	IC-005	
		< IC >	
IC001	8-759-154-48	IC uPC24M15HF (+15V REG)	
IC002	8-759-154-48	IC uPC24M15HF (-15V REG)	
IC003	9-906-809-01	IC uPC79M08HF (-8V REG)	
IC004	8-759-513-71	IC PQ05RF21 (+5V REG)	
IC005	9-906-810-01	IC PQ05RF14 (+5V REG)	
IC006	8-759-140-85	IC uPC1093J	
		< COIL >	
L001	9-906-831-01	LINE FILTER	
L002	9-906-832-01	LINE FILTER	
L003	9-906-833-01	CHOK COIL	
L004	9-906-833-01	CHOK COIL	
L005	9-906-834-01	CHOK COIL	

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Ref. No.	Part No.	Description			Remarks
L006	9-906-835-01	CHOK COIL			
L007	9-906-836-01	FERRITE BEAD			
L008	9-906-836-01	FERRITE BEAD			
L009	9-906-836-01	FERRITE BEAD			
L010	9-906-836-01	FERRITE BEAD			
		< PHOTO COUPLER >			
PC001	9-998-135-01	PHOTO COUPLER PC113			
PC002	9-906-813-01	PHOTO COUPLER TLP741J			
		< FET >			
⚠Q001	9-906-806-01	FET 2SK1082-01			
		< RESISTOR >			
⚠R001	1-214-930-11	METAL GLAZE	510K	1%	1/2W
⚠R002	9-906-814-01	FUSIBLE RESISTOR	10		1.6W
R003	1-249-417-11	CARBON	1K	5%	1/2W
R004	9-906-815-01	METAL GLAZE	51		1W
⚠R005	1-215-861-00	METAL GLAZE	47	5%	1W
⚠R006	1-215-904-11	METAL GLAZE	100K	5%	2W
⚠R007	1-215-904-11	METAL GLAZE	100K	5%	2W
⚠R008	1-220-388-11	METAL GLAZE	68K	5%	1W
⚠R009	1-215-904-11	METAL GLAZE	100K	5%	2W
R010	9-906-816-01	CEMENT RESISTOR	0.22		5W
R011	1-247-855-31	CARBON	10K	5%	1/4W
R012	1-249-433-11	CARBON	22K	5%	1/4W
R013	1-249-391-11	CARBON	6.8	5%	1/4W
R014	1-249-432-11	CARBON	18K	5%	1/4W
R015	1-215-861-00	METAL GLAZE	47		1W
R016	1-249-385-11	CARBON	2.2	5%	1/4W
R017	1-247-862-11	CARBON	20K	5%	1/4W
R018	1-249-432-11	CARBON	18K	5%	1/4W
R019	1-247-807-31	CARBON	100	5%	1/4W
R020	1-247-807-31	CARBON	100	5%	1/4W
⚠R021	1-215-882-11	METAL GLAZE	22	5%	2W
⚠R022	1-215-882-11	METAL GLAZE	22	5%	2W
⚠R023	1-215-892-11	METAL GLAZE	1K	5%	2W
R024	1-247-843-31	CARBON	3.3K	5%	1/4W
⚠R025	1-215-882-11	METAL GLAZE	22	5%	1/4W
⚠R026	1-215-882-11	METAL GLAZE	22	5%	1/4W
⚠R027	1-215-892-11	METAL GLAZE	1K	5%	2W
R028	9-906-817-01	CEMENT RESISTOR	3.9		2.1W
R029	9-906-818-01	CEMENT RESISTOR	3.9		2.1W
R030	1-247-839-31	CARBON	2.2K	5%	1/4W
⚠R031	1-216-358-11	METAL GLAZE	5.6	5%	1W
⚠R032	1-216-360-11	METAL GLAZE	8.2	5%	1W
⚠R033	1-215-452-11	METAL GLAZE	180	5%	2W
R034	1-249-417-11	CARBON	1K	5%	1/4W
R035	1-249-417-11	CARBON	1K	5%	1/4W
⚠R036	1-216-378-11	METAL GLAZE	5.6	5%	2W
⚠R037	1-216-380-11	METAL GLAZE	8.2	5%	2W
R038	1-249-417-11	CARBON	1K	5%	1/4W
R039	1-249-417-11	CARBON	1K	5%	1/4W
R040	1-249-393-11	CARBON	10	5%	1/4W
R041	1-247-807-31	CARBON	100	5%	1/4W
R042	1-249-397-11	CARBON	22	5%	1/4W
R044	1-249-403-11	CARBON	68	5%	1/4W
R045	1-247-809-31	CARBON	120	5%	1/4W
R046	1-249-417-11	CARBON	1K	5%	1/4W
R047	1-249-417-11	CARBON	1K	5%	1/4W
		< SWITCH >			
⚠SW001	1-692-728-11	SWITCH			
		< TRANSFORMER >			
⚠T001	9-907-313-01	TRANSFORMER, SWITCHING			
		< THERMOSTAT >			
⚠TS001	9-906-839-01	THERMOSTAT			
		< VARIABLE RESISTOR >			
VR001	9-906-819-01	VARIABLE RESISTOR 300			

****

MISCELLANEOUS
****

10	1-541-684-31	MOTOR, DC
14	1-751-565-11	CABLE, FLAT (FRS-14)
58	1-751-566-11	CABLE, FLAT (FKK-1)
59	1-751-568-11	CABLE, FLAT (FKK-2)
96	1-520-503-11	METER UNIT, LED LEVEL
97	1-562-148-11	HOUSING, 3P
98	1-467-473-11	KEYBOARD BLOCK
* 116	1-633-548-13	PTC-39 BOARD
120	1-562-151-11	HOUSING, 6P
156	1-237-127-11	RES, VAR, CARBON 5K

****

ACCESSORIES & PACKING MATERIALS
****

⚠	1-590-910-11	CORD SET, POWER
	3-757-628-11	MANUAL, INSTRUCTION (ENGLISH)
	3-757-628-31	MANUAL, INSTRUCTION (FRENCH)
	3-757-628-41	MANUAL, INSTRUCTION (GERMANY)
	3-757-632-11	MANUAL, INSTRUCTION (PRIMER) (ENGLISH)
	3-757-632-31	MANUAL, INSTRUCTION (PRIMER) (FRENCH)
	3-757-632-41	MANUAL, INSTRUCTION (PRIMER) (GERMANY)
*	3-957-092-01	CUSHION (UPPER)
*	3-957-093-01	CUSHION (LOWER)
*	3-957-094-11	INDIVIDUAL CARTON

****

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Ref. No.	Part No.	Description	Remarks

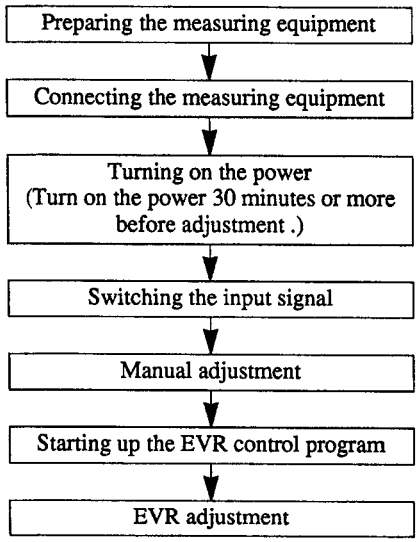
****
HARDWARE LIST
****

#1	7-685-646-79	SCREW +BVTP 3X8 TYPE2 IT-3	
#2	7-685-648-79	SCREW +BVTP 3X12 TYPE2 SLIT	
#3	7-621-592-00	SCREW +K 2.6X6	
#4	7-624-108-04	STOP RING 4.0, TYPE -E	
#5	7-623-924-01	WASHER 3.0, NYLONE	
#6	7-621-731-08	SET-SCT, HEX. 2X2.5, FLAT POINT	
#7	7-682-545-09	SCREW +B 3X4	
#8	7-682-646-09	SCREW +PS 3X5	
#9	7-688-003-12	W 3, MIDDLE	
#10	7-623-710-47	WASHER 8, WABE TYPE	
#11	7-682-553-04	SCREW +P 3X20	
#12	7-685-134-19	SCREW +P 2.6X8 TYPE2 NON-SLIT	
#13	7-685-647-79	SCREW +BVTP 3X10 TYPE2 IT-3	

SECTION 8
ELECTRICAL ADJUSTMENTS

8-1. OUTLINE

Adjust as follows:



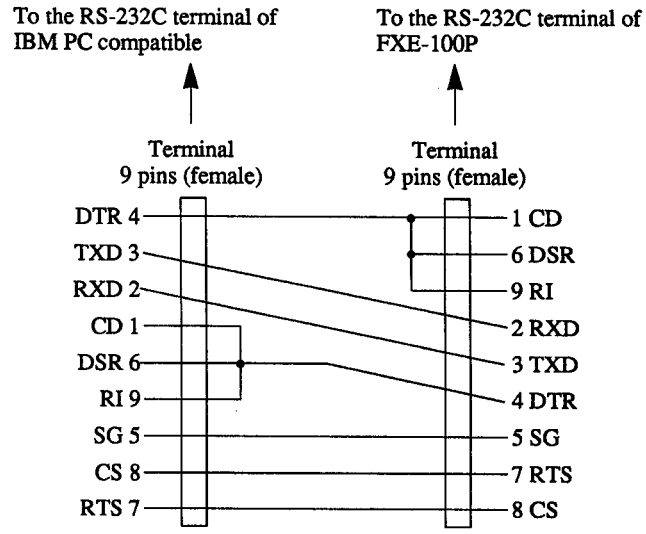
8-2. PREPARING THE MEASURING EQUIPMENT

8-2-1. Measuring Equipment and Tools Neededes

The following measuring equipment is necessary for making adjustments:

- Pattern generator
  which has the following three functions:
  i. S VIDEO terminal
  ii. White raster (100% white) output. (Refer to the next subsection, "8-2-2. Note on Measuring Equipment and Tools".)
  iii. Circle (monoscope) output
- Oscilloscope
- Vector scope
- 75 Ω terminator
- Monitor TV
- A personal computer (IBM PC compatible and MS-DOS)
- EVR control program (Refer to the next subsection, "8-2-2. Note on Measuring Equipment and Tools".)
- Adjusting disk: EVR control disk (J-6082-280-A)
- The floppy disk contains the programs for IBM PC compatible. (Refer to the next subsection, "8-2-2. Note on Measuring Equipment and Tools".)
- Exclusive RS-232C cable
  Sony RS-232C cable (1.5m cross cable) (PTA-909C)

Pin connections in the cable



8-2-2. Note on Measuring Equipment and Tools

Before adjustment, check the followings:

- Directly input the signals from the pattern generator to the waveform monitor or vector scope to check that the 100% white level and the color vectors are correct.
- Turn on the power of the measuring equipment 30 minutes or more before use.
- Do not use the original EVR control disk. Be sure to make a backup copy and use the backup copy disk for the adjustment.

8-3. CONNECTING THE MEASURING EQUIPMENT

Connect the measuring equipment as shown in the following tables:

Input to the unit

Input to the unit		Input signal
PLAYER 1	S VIDEO	CB
	VIDEO	—
PLAYER 2	S VIDEO	—
	VIDEO	CB
AUX 1	S VIDEO	—
	VIDEO	CIRCLE

Output from the unit

Output terminal	Measuring equipment
PGM 1	Oscilloscope Vector scope (terminated at 75 Ω)
MONITOR	Monitor TV
EDL IN/OUT	IBM PC compatible (RS-232C or COM terminal)

- **Service mode setting**
  (Timer counter display panel DP-46 board)

1) Press the SCREEN key (S904) in the SCREEN (monitor screen select) block to display the menu.
2) While pressing the Jog/Shuttle dial, press the three RESET keys simultaneously.

PLAYER 1	RESET key	(S916)	} Press down simultaneously.
PLAYER 2	RESET key	(S915)	
RECORDER	RESET key	(S917)	

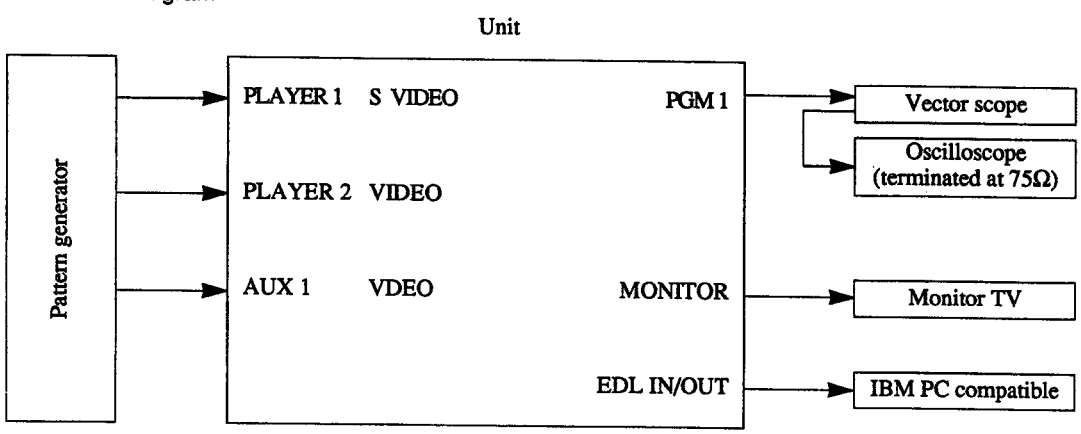
3) The service menu appears on the monitor TV.
   Press SET to Adjust.

```
*
  SERVICE
    ITEM-101
  EVR DATA ADJUST

  RS-232C          GO
       EXIT POWER OFF
```

4) Canceling the service mode
   Turn off the power switch (SW1) to cancel service mode.

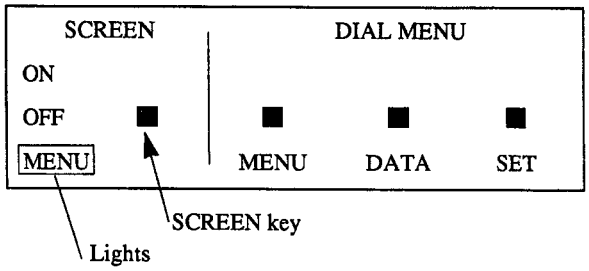
Connection diagram



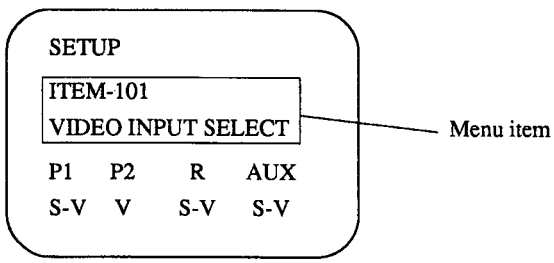
8-4. SWITCHING THE INPUT SIGNAL

Perform the following steps to set PLAYER 1 to S VIDEO, PLAYER 2 to VIDEO and AUX 1 to VIDEO.

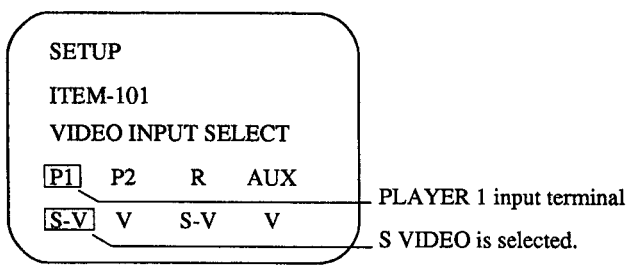
1) Turn on the power of the unit, measuring equipment and monitor TV.
2) Press the SCREEN key to enter the MENU mode. MENU will light.



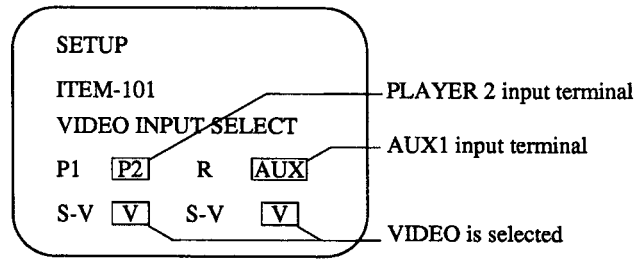
3) Push in the JOG SHUTTLE dial to enter JOG mode. The monitor TV displays a menu item.
4) Rotate the JOG dial while holding down the MENU key and display ITEM-101 (VIDEO INPUT SELECT) in the menu item.



5) (Without pressing the MENU key) rotate the JOG dial so that V (VIDEO) or S-V (S VIDEO) flashes under P1 (PLAYER 1). This operation allows the input signal of P1 (PLAYER 1) to be switched.
6) Rotate the JOG dial while holding down the DATA key to select S-V (S VIDEO) for P1 (PLAYER 1).
7) Press the SET key.
The input signal of P1 (PLAYER 1) is switched to S-V (S VIDEO). The selected data is stored.



8) Select for P2 (PLAYER 2) and AUX (AUX 1) in the same manner as steps 5 and 7, however instead select V (VIDEO) in step 6.



9) Press the SCREEN key to switch to the ON mode or OFF mode.

8-5. MANUAL ADJUSTMENT

Adjust each adjusting element while referring to "8-8. ADJUSTMENT PARTS ARRANGEMENT DIAGRAM" described later.

Note: Do not use an ordinary screwdriver on the elements. Use only the adjustment screwdrivers.

8-5-1. DV-19 4fsc Adjustment

Adjustment Purpose: To determine the oscillation frequency (sub carrier fo) which becomes the master.

Adjustment Error Symptom: After editing, the color fades or becomes rainbow-colored, or the picture runs horizontally.

Signal	INPUT: CB (PLAYER 1, S VIDEO)
Panel Operation	A-BUS: PLAYER 1 B-BUS: PLAYER 1
Measurement Point	TP503, IC532 pin ③
Measuring Equipment	Frequency counter
Adjusting Element	CV502
Specified Value	17.734476±0.00002MHz (Adjust the value nearest to the center.)

8-5-2. MM27A Write APC Adjustment

Adjustment Purpose: To adjust the position to write data to the memory.

Adjustment Error Symptom: The picture runs horizontally.

Signal	INPUT: No signal
Panel Operation	A-BUS: No signal B-BUS: No signal
Measurement Point	TP1, IC181 pin ㉜
Measuring Equipment	Frequency counter
Adjusting Element	CV171
Specified Value	17.734476±0.00002MHz (Adjust the value nearest to the center.)

8-5-3. MM27B Write APC Adjustment

Adjustment Purpose: To adjust the position to write data to the memory.

Adjustment Error Symptom: The picture runs horizontally.

Signal	INPUT: No signal
Panel Operation	A-BUS: No signal B-BUS: No signal
Measurement Point	TP1, IC181 pin ㉜
Measuring Equipment	Frequency counter
Adjusting Element	CV171
Specified Value	17.734476±0.00002MHz (Adjust the value nearest to the center.)

8-5-4. MM27A Write AFC Adjustment

Adjustment Purpose:

Adjustment Error Symptom:

Signal	INPUT: CB (PLAYER 1, S VIDEO)
Panel Operation	A-BUS: PLAYER 1 B-BUS: PLAYER 1
Measurement Point	TP131, IC131 pin ⑪
Measuring Equipment	Digital Voltmeter
Adjusting Element	CV131
Specified Value	2.2±0.1 V (Adjust the value nearest to the center.)

8-5-5. MM27B Write AFC Adjustment

Adjustment Purpose:

Adjustment Error Symptom:

Signal	INPUT: CB (PLAYER 1, S VIDEO)
Panel Operation	A-BUS: PLAYER 1 B-BUS: PLAYER 1
Measurement Point	TP131, IC131 pin ⑪
Measuring Equipment	Digital Voltmeter
Adjusting Element	CV131
Specified Value	2.2±0.1 V (Adjust the value nearest to the center.)

8-6. STARTING UP THE EVR CONTROL PROGRAM

1) Turn on the power of the IBM PC compatible.
2) Start up the MS-DOS.
3) Insert the EVR control disk in the floppy disk drive.

   Note: First engage the tab of the floppy disk to write-protect to avoid deleting programs or data from the floppy disk.

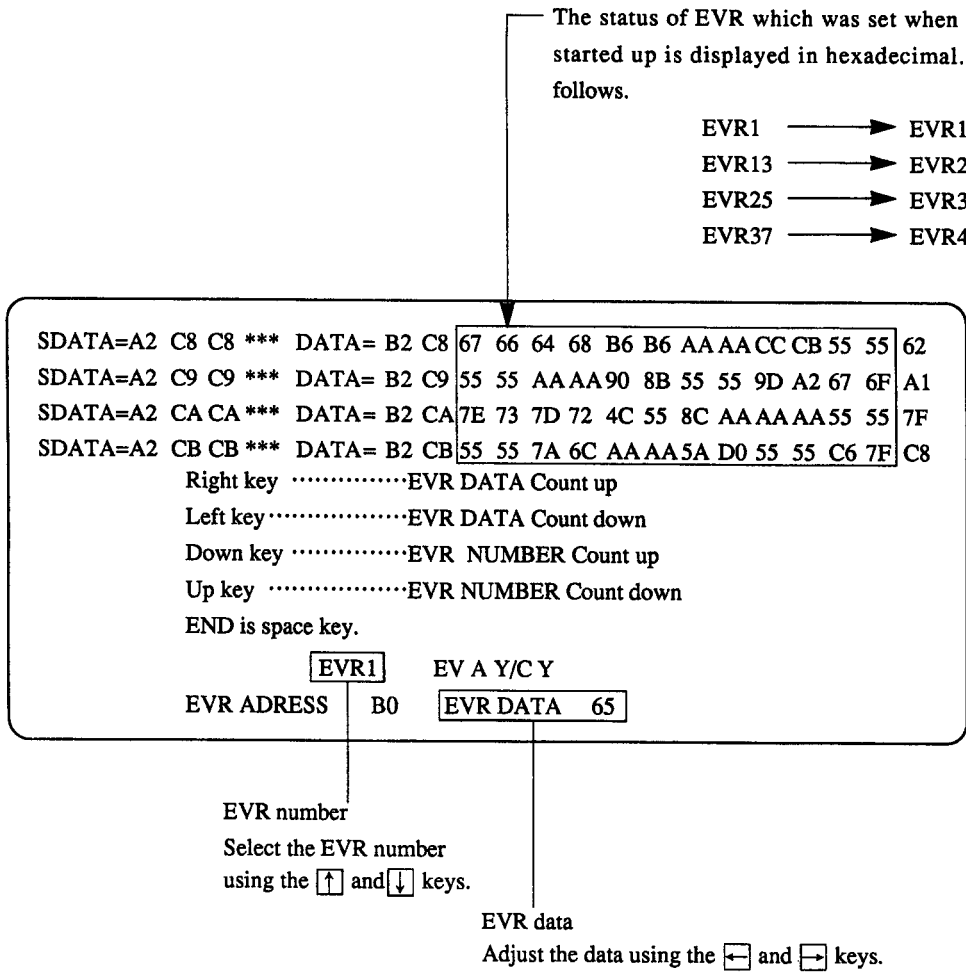
4) Type "IBM" and press the RETURN key to start up the EVR control program.
   The following shows an example of inserting the floppy disk into the drive A:

```
C>A:↵
A>IBM↵
```

5) The following screen appears. Check that the exclusive RS-232C cable is connected and press the RETURN key.

```
Please connect RS-232C cable, and please push space key!
```

6) The EVR setting screen appears.



Note 1: When adjusting the EVR data, do not continuously hold down the ← or → key, press the ← or → key repeatedly.

Note 2: When E2-PROM of IC709 or 710 has been replaced, set EVR48 to 7F. When 7F is not set, data in the IC is effective.

7) Perform the adjustments according to the next subsection, "8-7. EVR ADJUSTMENT"

8) When all the adjustments are completed, press the space bar. The EVR control program ends and the MS-DOS prompt will appear.

8-7. EVR ADJUSTMENT

Adjust each EVR using the cursor keys. See "ADJUSTMENT PARTS ARRANGEMENT DIAGRAM" described later for the test points.

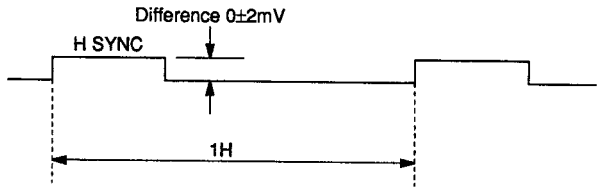
8-7-1. Fader A DC Level Adjustment

Adjustment Purpose: To adjust the balance of the black level of the picture.

Adjustment Error Symptom: The black level is not the same between the A-BUS and B-BUS.

Note: Adjust the black level balance of B-BUS as described in the next subsection "Fader B DC Level Adjustment". Avoid adjusting the balance of A-BUS in this "Fader A DC Level Adjustment" if possible.

Signal	INPUT: CB (PLAYER 1, S VIDEO)
Panel Operation	A-BUS: PLAYER 1 B-BUS: PLAYER 1 WIPE PATTERN: ■ EFFECT TRANSITION LEVER: A-BUS
Measurement Point	CL628 (Q613(E))
Measuring Equipment	Oscilloscope (range AC)
Adjusting Element	EVR 23 (EV A FDC)
Standard Setting	67
Specified Value	Difference 0±2 mV

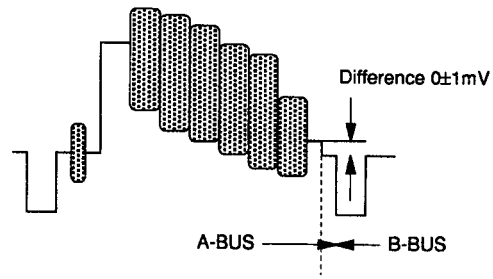


8-7-2. Fader B DC Level Adjustment

Adjustment Purpose: To adjust the balance of the black level of the picture.

Adjustment Error Symptom: The black level is not the same between the A-BUS and B-BUS.

Signal	INPUT: CB (PLAYER 1, S VIDEO)
Panel Operation	A-BUS: PLAYER 1 B-BUS: PLAYER 1 WIPE PATTERN: ■ EFFECT TRANSITION LEVER: Adjust so that the center of the black bar of CB is wiped.
Measurement Point	Video picture of PGM1
Measuring Equipment	Oscilloscope
Adjusting Elemen	EVR 24 (EV B FDC)
Standard Setting	6F
Specified Value	Difference 0±1 mV

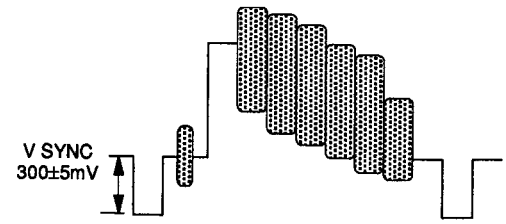


8-7-3. Sync Level Adjustment

Adjustment Purpose: To adjust the sync level.

Adjustment Error Symptom: The brightness of the screen varies due to changes in the sync length.

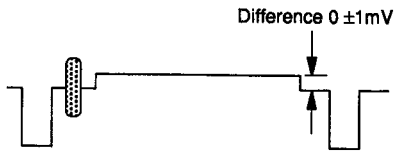
Signal	INPUT: CB (PLAYER 1, S VIDEO)
Panel Operation	A-BUS: PLAYER 1 B-BUS: PLAYER 1 WIPE PATTERN: ■ EFFECT TRANSITION LEVER: A-BUS
Measurement Point	Video picture of PGM1
Measuring Equipment	Oscilloscope
Adjusting Elemen	EVR 31 (EV SYNCLEV)
Standard Setting	8C
Specified Value	V SYNC 300±5mV



8-7-4 Set Up Level Adjustment

Adjustment Purpose: To adjust the set up to 0.
Adjustment Error Symptom: Black seems to float on the screen.

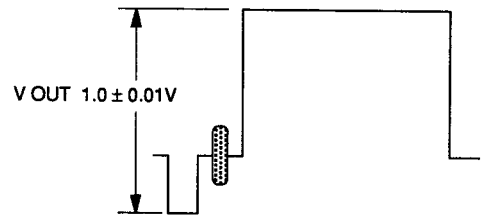
Signal	INPUT: No input
Panel Operation	MIX/EFFECT: NORMAL MIX EFFECT TRANSITION LEVER: A-BUS Press the BLACK FADE. (The indicator flashes.)
Measurement Point	Video picture of PGM1
Measuring Equipment	Oscilloscope
Adjusting Elemen	EVR 29 (EV SET UP)
Standard Setting	4C
Specified Value	Difference 0±1 mV



8-7-5. Read A Y Level Adjustment

Adjustment Purpose: To adjust the Y level read from the A-BUS memory.
Adjustment Error Symptom: The background white is not correctly displayed when white is selected as the background color of the A-BUS.

Signal	INPUT: CB (PLAYER 1, S VIDEO)
Panel Operation	A-BUS: PLAYER 1 B-BUS: PLAYER 1 WIPE PATTERN: ◻■ EFFECT TRANSITION LEVER: A-BUS 100% white is selected as the background color of the A-BUS and B-BUS.
Measurement Point	Video picture of PGM1
Measuring Equipment	Oscilloscope
Adjusting Elemen	EVR 5 (EV A RY)
Standard Setting	B6
Specified Value	V OUT 1.0±0.01V

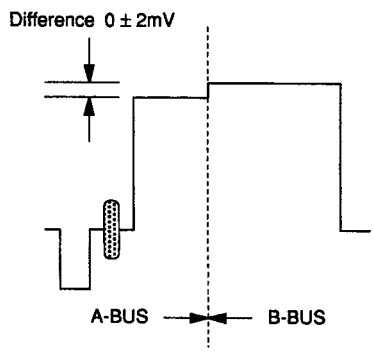


8-7-6. Read B Y Level Adjustment

Adjustment Purpose: To adjust the Y level read from the B-BUS memory.

Adjustment Error Symptom: The background white is not correctly displayed when white is selected as the background color of the B-BUS.

Signal	INPUT: CB (PLAYER 1, S VIDEO)
Panel Operation	Switch the pattern generator output to the white raster. A-BUS: PLAYER 1 B-BUS: PLAYER 1 WIPE PATTERN: ■ EFFECT TRANSITION LEVER: Wipe the A-BUS and B-BUS in the middle of the screen. Background color: A-BUS and B-BUS are white.
Measurement Point	Video picture of PGM1
Measuring Equipment	Oscilloscope
Adjusting Elemen	EVR 6 (EV B RY)
Standard Setting	B6
Specified Value	Difference 0±2 mV

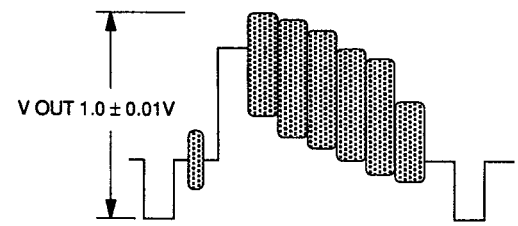


8-7-7. Write A Y Level Adjustment

Adjustment Purpose: To adjust the Y level written to the A-BUS memory.

Adjustment Error Symptom: Even if white is correctly displayed as the background color of the A-BUS, white is not correctly displayed when a picture is input.

Signal	INPUT: CB (PLAYER 1, S VIDEO)
Panel Operation	A-BUS: PLAYER 1 B-BUS: PLAYER 1 WIPE PATTERN: ■ EFFECT TRANSITION LEVER: A-BUS
Measurement Point	Video picture of PGM1
Measuring Equipment	Oscilloscope
Adjusting Elemen	EVR 3 (EV A WY)
Standard Setting	64
Specified Value	V OUT 1.0±0.01V

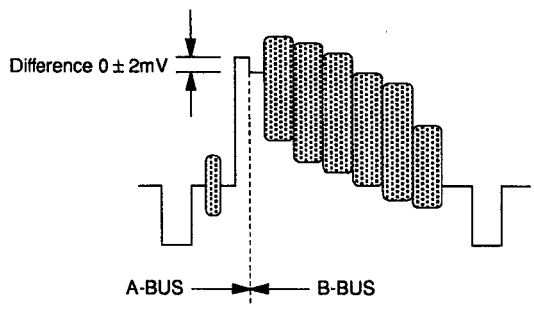


8-7-8. Write Y Level Balance Adjustment

Adjustment Purpose: To adjust the Y level written to the B-BUS memory.

Adjustment Error Symptom: Even if white is correctly displayed as the background color of the B-BUS, white is not correctly displayed when a picture is input.

Signal	INPUT: CB (PLAYER 1, S VIDEO)
Panel Operation	A-BUS: PLAYER 1 B-BUS: PLAYER 1 WIPE PATTERN: ◨ EFFECT TRANSITION LEVER: Wipe the A-BUS and B-BUS in the middle of the white bar.
Measurement Point	Video picture of PGM1
Measuring Equipment	Oscilloscope
Adjusting Elemen	EVR 4 (EV B WY)
Standard Setting	68
Specified Value	Difference 0±2 mV

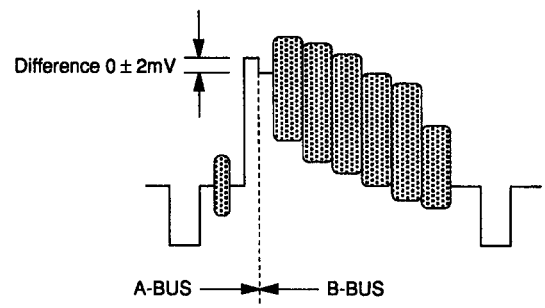


8-7-9. Y/C SEP A Y Level Adjustment

Adjustment Purpose: To adjust the Y level written to the A-BUS memory when a composite signal is input.

Adjustment Error Symptom: The Y level of the A-BUS is not correctly output when a composite signal is input.

Signal	INPUT: CB (PLAYER 2, VIDEO) INPUT: CB (PLAYER 1, S VIDEO)
Panel Operation	A-BUS: PLAYER 2 B-BUS: PLAYER 1 WIPE PATTERN: ◨ EFFECT TRANSITION LEVER: Wipe the A-BUS and B-BUS in the middle of the white bar.
Measurement Point	Video picture of PGM1
Measuring Equipment	Oscilloscope
Adjusting Elemen	EVR 1 (EV A Y/C Y)
Standard Setting	67
Specified Value	Difference 0±2 mV

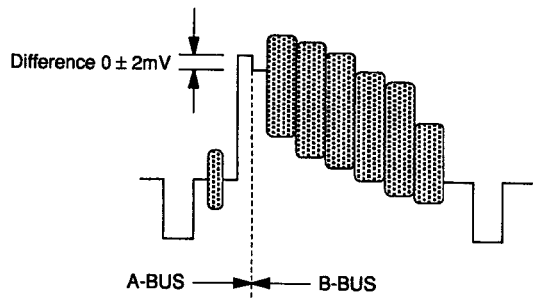


8-7-10. Y/C SEP B Y Level Balance Adjustment

Adjustment Purpose: To adjust the Y level written to the B-BUS memory when a composite signal is input.

Adjustment Error Symptom: The Y level of the B-BUS is not correctly output when a composite signal is input.

Signal	INPUT: CB (PLAYER 2, VIDEO)
Panel Operation	A-BUS: PLAYER 2 B-BUS: PLAYER 2 WIPE PATTERN: ◧ EFFECT TRANSITION LEVER: Wipe in the middle of the white bar.
Measurement Point	Video picture of PGM1
Measuring Equipment	Oscilloscope
Adjusting Elemen	EVR 2 (EV B Y/C Y)
Standard Setting	66
Specified Value	Difference 0±2 mV

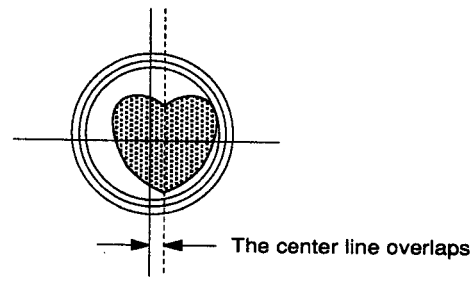


8-7-11. A HCENT Adjustment

Adjustment Purpose: To align the center of the A-BUS display with the center of the input picture.

Adjustment Error Symptom: The input picture is shifted from the center, or the right and left sides of the display turn black.

Signal	INPUT: CIRCLE (AUX 1) A-BUS: AUX B-BUS: AUX (BACKGROUND: BLACK)
Panel Operation	WIPE PATTERN: ♥ EFFECT TRANSITION LEVER: Display the heart-shaped pattern in the middle of the screen.
Measurement Point	Video picture of PGM1
Measuring Equipment	Monitor
Adjusting Elemen	EVR 9 (EV A HCENT)
Standard Setting	CC
Specified Value	The center line of the circle overlaps with the center line of the heart-shaped pattern.

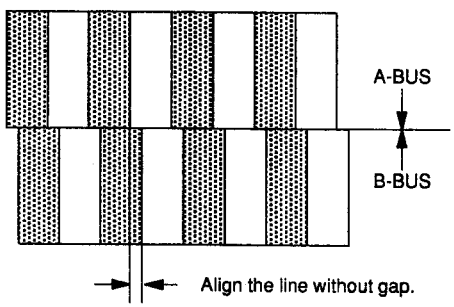


8-7-12. B HCENT Balance Adjustment

Adjustment Purpose: To align the center of the B-BUS screen with the center of the A-BUS screen.

Adjustment Error Symptom: When the A-BUS signal is the same as the B-BUS signal, the screen is moved right or left using the effect transition lever.

Signal	INPUT: CB (PLAYER 2, VIDEO)
Panel Operation	A-BUS: PLAYER 2 B-BUS: PLAYER 2 WIPE PATTERN: ▬ EFFECT TRANSITION LEVER: Wipe in the middle of the display.
Measurement Point	Video picture of PGM1
Measuring Equipment	Monitor
Adjusting Elemen	EVR 10 (EV B HCENT)
Standard Setting	CB
Specified Value	The vertical lines are aligned without gaps.

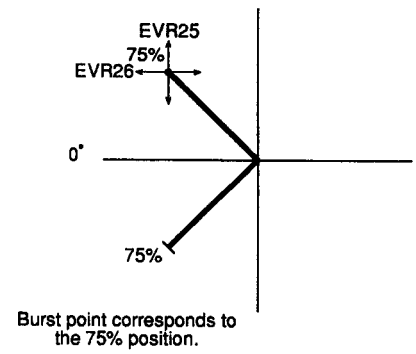


8-7-13. Burst Level Adjustment

Adjustment Purpose: To adjust the color burst level.

Adjustment Error Symptom: Color depth of the VCR picture etc. varies depending on whether the signal passes through the unit.

Signal	INPUT: CB (PLAYER 1, S VIDEO)	
Panel Operation	A-BUS: PLAYER 1 B-BUS: PLAYER 1 WIPE PATTERN: ◨ EFFECT TRANSITION LEVER: A-BUS	
Measurement Point	Video picture of PGM1	
Measuring Equipment	Vector scope	
Adjusting Elemen	EVR 25 (EV BST R)	EVR 26 (EV BST B)
Standard Setting	7E	73
Specified Value	75% Position	



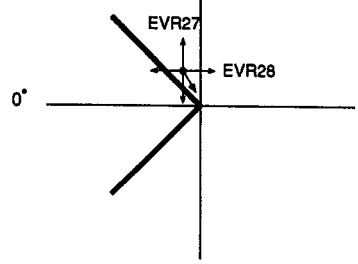
8-7-14. A White Balance Adjustment

Adjustment Purpose: To adjust the white balance of the A-BUS.

Adjustment Error Symptom: White parts are slightly colored.

Signal	INPUT: CB (PLAYER 1, S VIDEO)	
Panel Operation	A-BUS: PLAYER 1 B-BUS: PLAYER 1 WIPE PATTERN: ▢■ EFFECT TRANSITION LEVER: A-BUS	
Measurement Point	Video picture of PGM1	
Measuring Equipment	Vector scope	
Adjusting Elemen	EVR 27 (EV PLSA R)	EVR 28 (EV PLSA B)
Standard Setting	7D	72
Specified Value	The luminous point comes to the center when the vector gain is maximized	

Bring the luminous point to the center using EVR27 and EVR28.



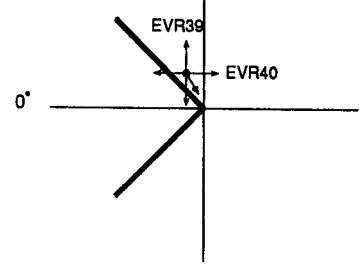
8-7-15. B White Balance Adjustment

Adjustment Purpose: To adjust the white balance of the B-BUS.

Adjustment Error Symptom: White parts are slightly colored.

Signal	INPUT: CB (PLAYER 1, S VIDEO)	
Panel Operation	A-BUS: PLAYER 1 B-BUS: PLAYER 1 WIPE PATTERN: ▢■ EFFECT TRANSITION LEVER: B-BUS	
Measurement Point	Video picture of PGM1	
Measuring Equipment	Vector scope	
Adjusting Elemen	EVR 39 (EV PLSB R)	EVR 40 (EV PLSB R)
Standard Setting	7A	6C
Specified Value	The luminous point comes to the center when the vector gain is maximized.	

Bring the luminous point to the center using EVR39 and EVR40.



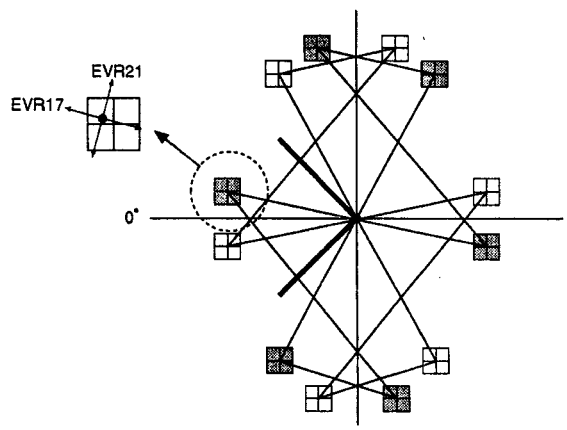
8-7-16. A Read Chroma Adjustment

Adjustment Purpose: To adjust the color levels and color phases of the A-BUS.

Adjustment Error Symptom: Some colors have different shades or phases.

Signal	INPUT: CB (PLAYER 1, S VIDEO)	
Panel Operation	A-BUS: PLAYER 1 B-BUS: PLAYER 1 WIPE PATTERN: ◨ EFFECT TRANSITION LEVER: A-BUS	
Measurement Point	Video picture of PGM1	
Measuring Equipment	Vector scope	
Adjusting Elemen	EVR 21 (EV A HUE)	EVR 17 (EV A RC)
Standard Setting	9D	90
Specified Value	The luminous point of each color comes to the center of the four squares.	

Bring the luminous point of each color into the center of the four squaresusing EVR21 and EVR17.
(Bring the luminous point into the standard luminous point frames of the vector scope.)

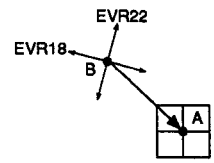


8-7-17. B Read Chroma Adjustment

Adjustment Purpose: To adjust the color levels and color phases of the B-BUS.

Adjustment Error Symptom: Some colors have different shades or phases.

Signal	NPUT: CB (PLAYER 1, S VIDEO)	
Panel Operation	A-BUS: PLAYER 1 B-BUS: PLAYER 1 WIPE PATTERN: ▬ EFFECT TRANSITION: At the center	
Measurement Point	Video picture of PGM1	
Measuring Equipment	Video picture of PGM1	
Adjusting Elemen	EVR 22 (EV B HUE)	EVR 18 (EV B RC)
Standard Setting	A2	8B
Specified Value	The B read chroma luminous point overlaps with the A read chroma luminous point of the previous subsection.	



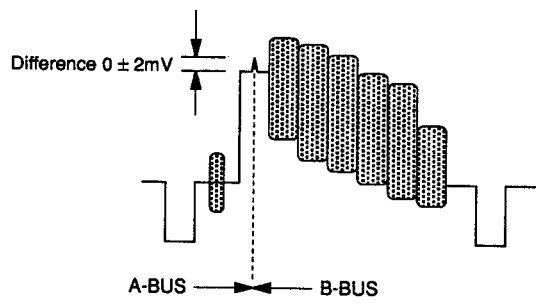
The B read chroma luminous point overlaps with the A read chroma luminous point.

8-7-18. Soft Border Level Adjustment

Adjustment Purpose: To adjust the levels of the A-BUS and B-BUS borders when the soft border is selected.

Adjustment Error Symptom: The brightnesses of the A-BUS and B-BUS borders are different.

Signal	INPUT: CB (PLAYER 1, S VIDEO)
Panel Operation	A-BUS: PLAYER 1 B-BUS: PLAYER 1 WIPE PATTERN: ◨ PATTERN EDGE: SOFT EFFECT TRANSITIONEFFECT TRANSITION LEVER: Wipe in the center of the white bar.
Measurement Point	Video picture of PGM1
Measuring Equipment	Oscilloscope
Adjusting Elemen	EVR 47 (EV SB ADJ)
Standard Setting	C6
Specified Value	Difference 0±2 mV (Reduce the difference as much as possible.)

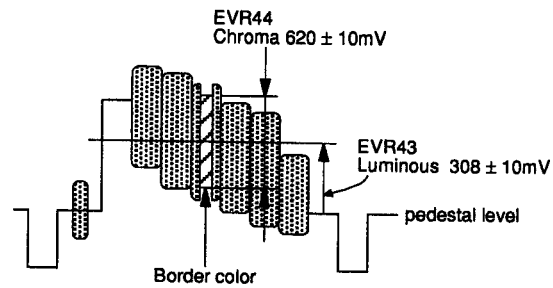


8-7-19. Border Color Y/C Level Adjustment

Adjustment Purpose: To adjust the YC level of the color border.

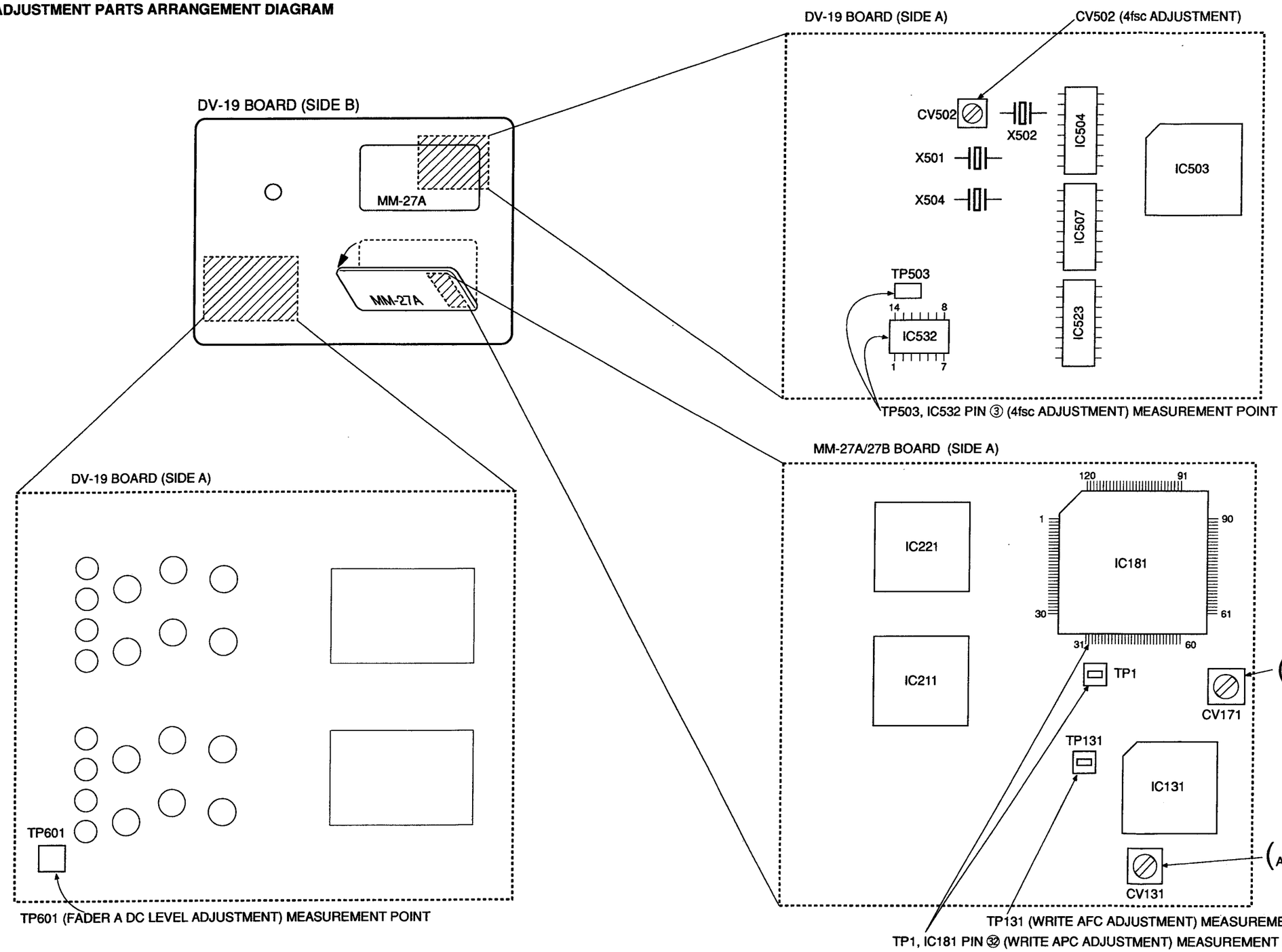
Adjustment Error Symptom: The YC level of the border of the color border wipe changes.

Signal	INPUT: CB (PLAYER 1, S VIDEO)	
Panel Operation	A-BUS: PLAYER 1 B-BUS: PLAYER 1 WIPE PATTERN: ◨ PATTERN EDGE: BORDER BORDER COLOR: LIGHT GREEN	
Measurement Point	Video picture of PGM1	
Measuring Equipment	Oscilloscope	
Adjusting Elemen	EVR 43 (EV BC Y)	EVR 44 (EV BC C ADJ)
Standard Setting	5A	D0
Specified Value	Luminous 308±10 mV	Chroma 620±10 mV



- The color bar signal and the border color signal are difficult to discremenate the border line between them. Move the WIPE position herizontally and confirm the border line.
- EVR43 (Luminance Adj.) sets the Y-level of the border color signal above the pedestal level.
- EVR44 (Chroma Adj.) sets the chroma level of the border color signal.

8-8. ADJUSTMENT PARTS ARRANGEMENT DIAGRAM



FXE-100P

SONY

SERVICE MANUAL

AEP Model
UK Model
E Model

CORRECTION-1

Please correct your service manual.

page	INCORRECT				CORRECT			
	Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
6-2	52	3-957-769-01	SET, KEY TOP		* 52	1-467-473-11	KY-22 BOARD	
	* 54	1-649-632-11	KY-22 BOARD		54	This part is not supplied.		
	98	1-467-473-11	KEYBOARD BLOCK		98	3-957-769-02	SET, KEY TOP	
7-35	*	1-649-632-11	KY-22 BOARD		*	1-467-473-11	KY-22 BOARD	

9-973-583-91

Sony Corporation
Consumer A&V Products Company
Personal A&V Products Div.

Published by Personal A&V Products Div.
Quality Engineering Dept.

FXE-100P

SONY

SERVICE MANUAL

AEP Model
UK Model
E Model

SUPPLEMENT-1

File this supplement with the Service Manual.

Subject : Change of Printed Wiring Boards

- The following two printing wiring boards are changed.

Before Change	After Change
AM-32 BOARD (A-7063-835-A)	AM-36 BOARD (A-7066-652-A)
AS-46 BOARD (A-7063-833-A)	AS-46P BOARD (A-7066-664-A)

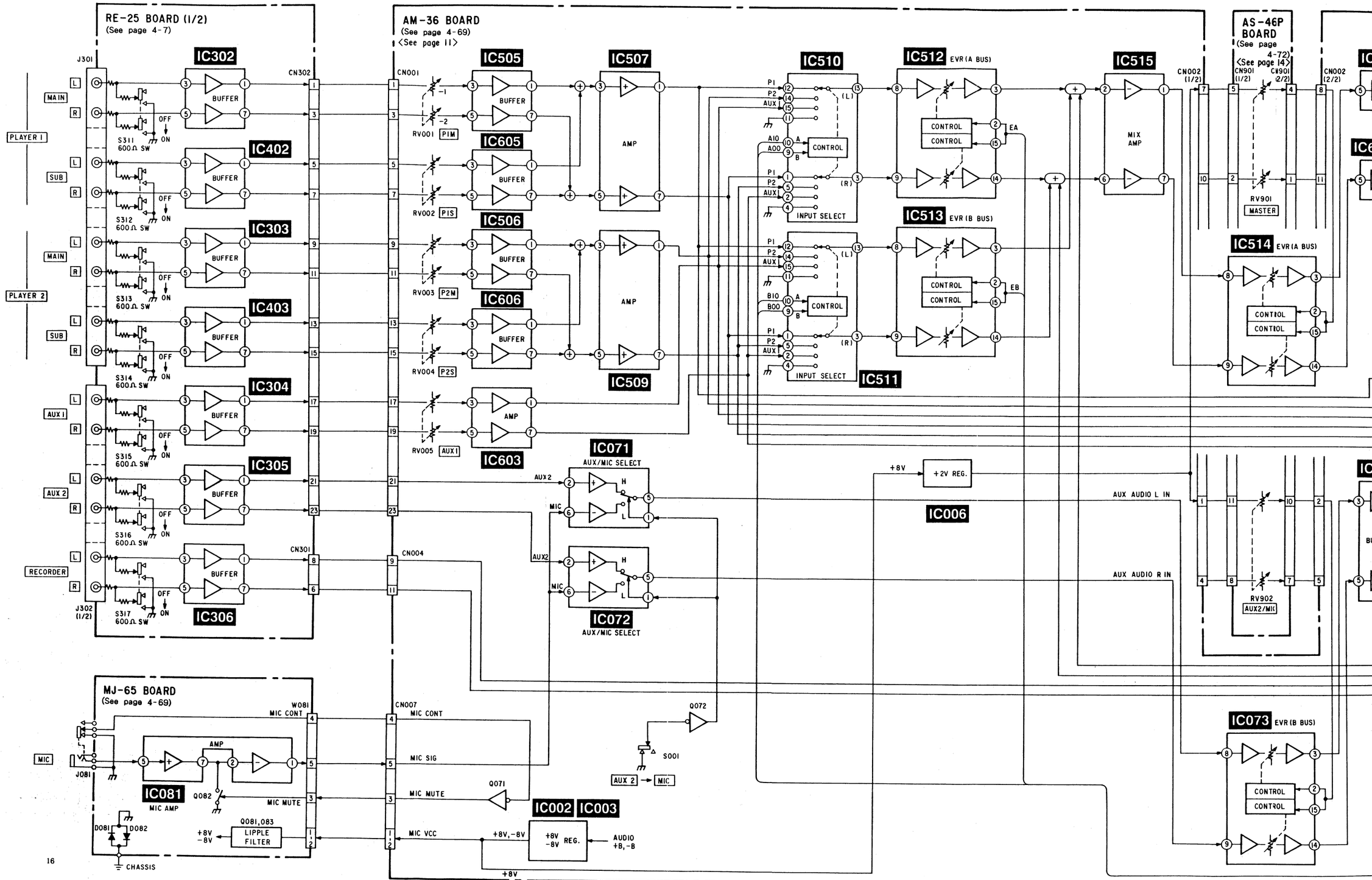
- Because these two boards are changed, the Block Diagram, Printed Wiring Board, Schematic Diagram and Electrical Parts List are also changed and added herewith.

Note :
"See page" indicates the page of the block diagrams and schematic diagrams to be referred to.

(See page) : If "See page" is in the round parenthesis ( ), refer to the Service Manual.

〈See page〉 : If "See page" is in the triangular parenthesis 〈 〉, refer to the Service Manual SUPPLEMENT-1.

AUDIO BLOCK DIAGRAM



IC512 EVR (A BUS)
IC513 EVR (B BUS)
IC511
CONTROL
CONTROL
EA
EB
IC515
MIX AMP
AS-46P BOARD
(See page 4-72)
<See page 14>
CN002 (1/2)
CN002 (2/2)
CN901 (1/2)
CN901 (2/2)
RV901
MASTER
IC514 EVR (A BUS)
IC520 (2/2)
IC620 (2/2)
AMP
IC516
IC616
PGM
REC
H
L
IC516 PGM/REC SELECT
IC616 PGM/REC SELECT
M20
IC520 (1/2)
IC620 (1/2)
PGM OUT L
PGM OUT R
RE-25 BOARD (2/2)
(See page 4-7)
CN301
IC301
S301
PGM 1
ON
OFF
S302
PGM 2
IC401
Q301 Q302
Q303 Q304
Q401 Q402
Q403 Q404
J302 (2/2)
J303
L
R
PGM 1
PGM 2
MONITOR OUT L
MONITOR OUT R
MUTE
MONITOR
IC004
IC005
IC051 (2/2)
BUFFER
AMP
RV006
MONITOR
Q051 Q052
Q061 Q062
IC061 (2/2)
Q031
POWER INITIAL MUTE
CN004
IC518 (MONITOR) OUTPUT SELECT
M10
M00
IC519
IC051 (1/2)
IC061 (1/2)
CN006
LV L
LV R
LEVEL METER
+8V
+2V REG.
IC006
AUX AUDIO L IN
AUX AUDIO R IN
RV902
AUX2/MIC
IC073 EVR (B BUS)
IC001
INV.
DC AMP
EA
EB
Q001
Q002
Q003
Q004
Q005
Q006
Q007
A00
A10
B00
B10
M00
M10
M20
AU SEL A0
AU SEL A1
AU SEL B0
AU SEL B1
MOUT SL 0
MOUT SL 1
MOUT SL 2
EV AUDIO A
EV AUDIO B
CN003
TO DV-19 BOARD (EFFECT SYSTEM CONTROL) CN702

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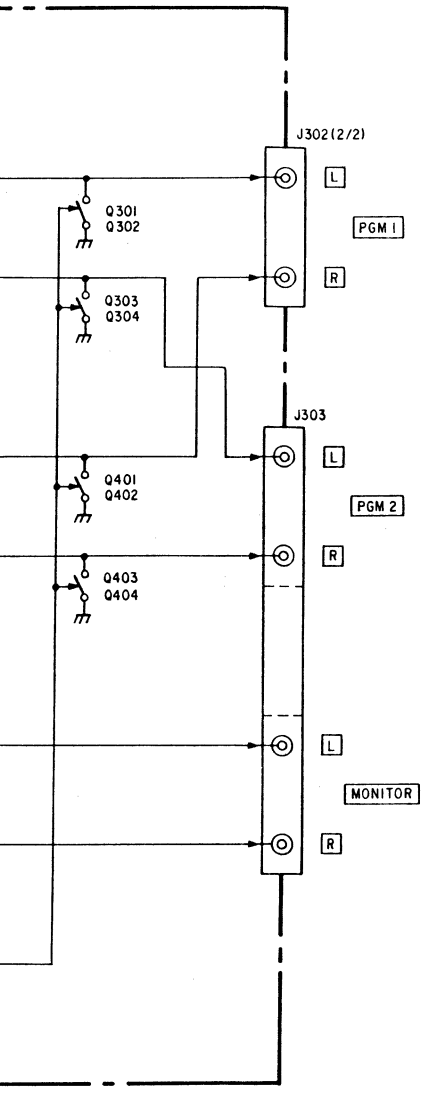

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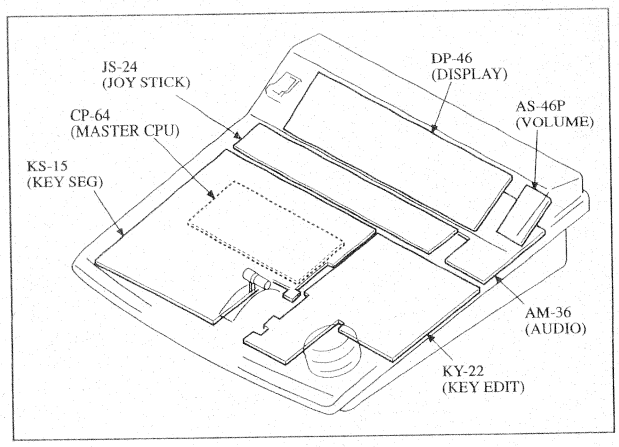
XE-100P



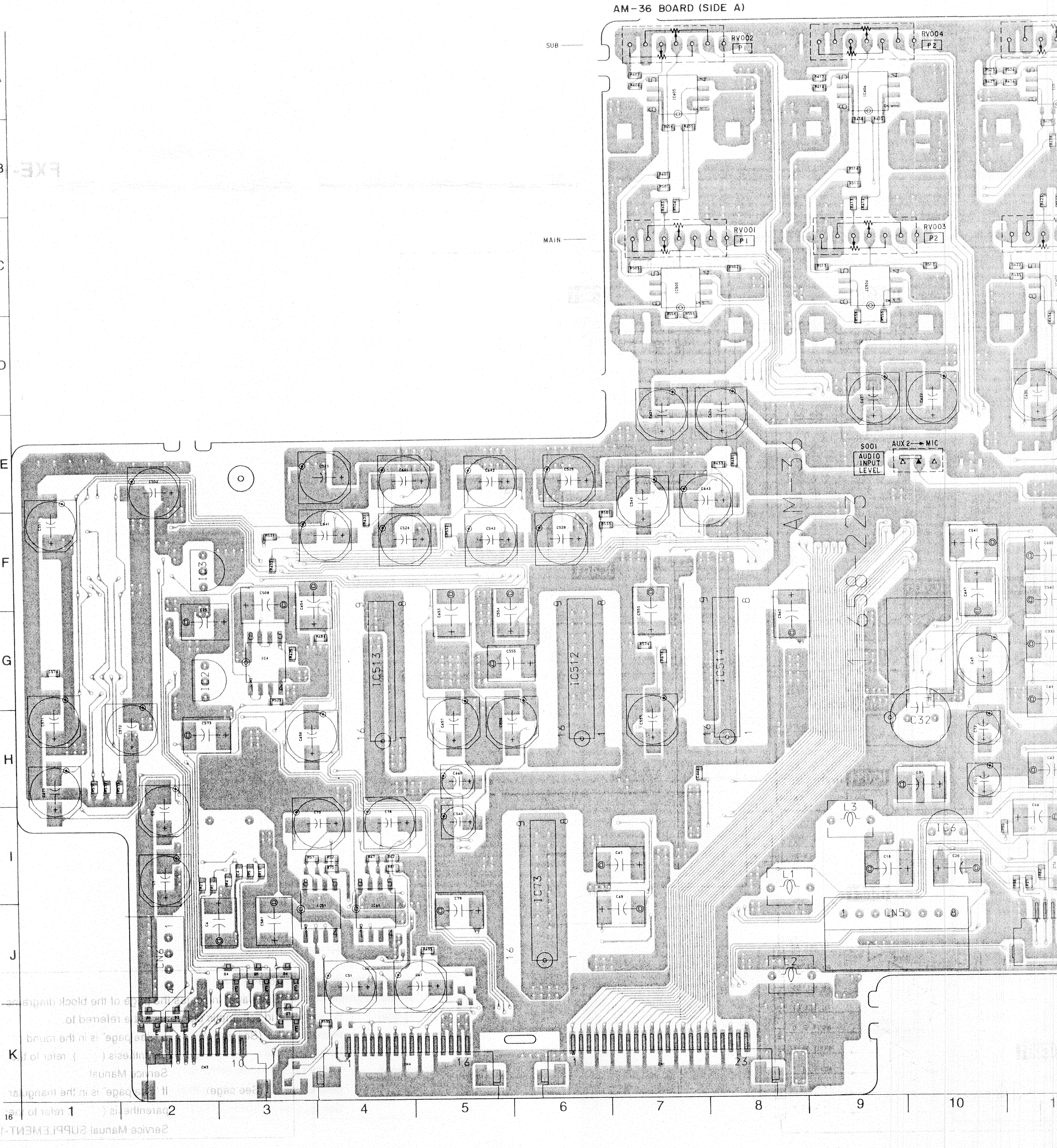
AM-36 BOARD

C001	I–22	C031	H–10	C078	I–4	C552	E–2	C582	I–22	C662	F–11	D502	E–24	IC073	I–6
C002	I–22	C032	H–10	C079	J–5	C553	G–7	C605	F–11	C663	G–18	D503	F–24	IC505	C–7
C003	H–2	C051	J–4	C090	J–18	C554	G–5	C606	F–11	C665	H–18	D504	H–24	IC506	C–9
C004	I–3	C061	J–5	C091	J–18	C555	G–5	C621	E–7	C666	H–7	D505	H–24	IC507	E–20
C005	I–2	C063	H–11	C507	F–22	C557	H–7	C622	E–10	C673	H–1	D601	G–24	IC509	E–19
C006	J–3	C064	G–11	C508	G–3	C558	H–6	C626	E–7	C674	G–22	D602	G–24	IC510	E–23
C011	I–17	C065	G–10	C523	E–4	C559	G–21	C627	E–9			D603	G–24	IC511	F–23
C013	I–18	C066	I–11	C524	F–5	C560	I–5	C635	E–11	CN001	K–7			IC512	G–6
C014	G–22	C067	I–6	C528	F–6	C562	F–11	C641	E–4	CN002	J–11	IC001	I–22	IC513	G–4
C015	G–22	C068	J–20	C529	E–6	C563	G–8	C642	E–5	CN003	K–2	IC002	G–2	IC514	G–8
C016	F–22	C069	J–6	C533	G–10	C564	H–16	C643	F–7	CN004	K–4	IC003	F–2	IC515	G–15
C017	I–16	C070	J–20	C534	G–11	C565	H–17	C647	G–10	CN005	J–9	IC004	G–3	IC516	E–18
C018	I–9	C071	H–10	C535	D–11	C566	H–18	C653	G–5	CN006	J–2	IC005	A–11	IC518	G–23
C019	I–15	C072	H–10	C541	F–4	C571	H–1	C654	F–4	CN007	H–11	IC006	J–10	IC519	G–14
C020	I–10	C074	I–14	C542	F–5	C572	H–2	C656	F–21			IC051	I–3	IC520	F–15
C021	J–17	C075	I–4	C543	F–7	C573	H–3	C657	H–5	D031	H–16	IC061	I–4	IC603	C–11
C023	J–17	C076	I–11	C547	F–10	C574	G–1	C658	H–3	D032	H–16	IC071	I–14	IC605	A–7
C025	G–3	C077	J–14	C551	F–1	C581	J–3	C660	H–5	D501	F–24	IC072	J–14	IC606	A–9

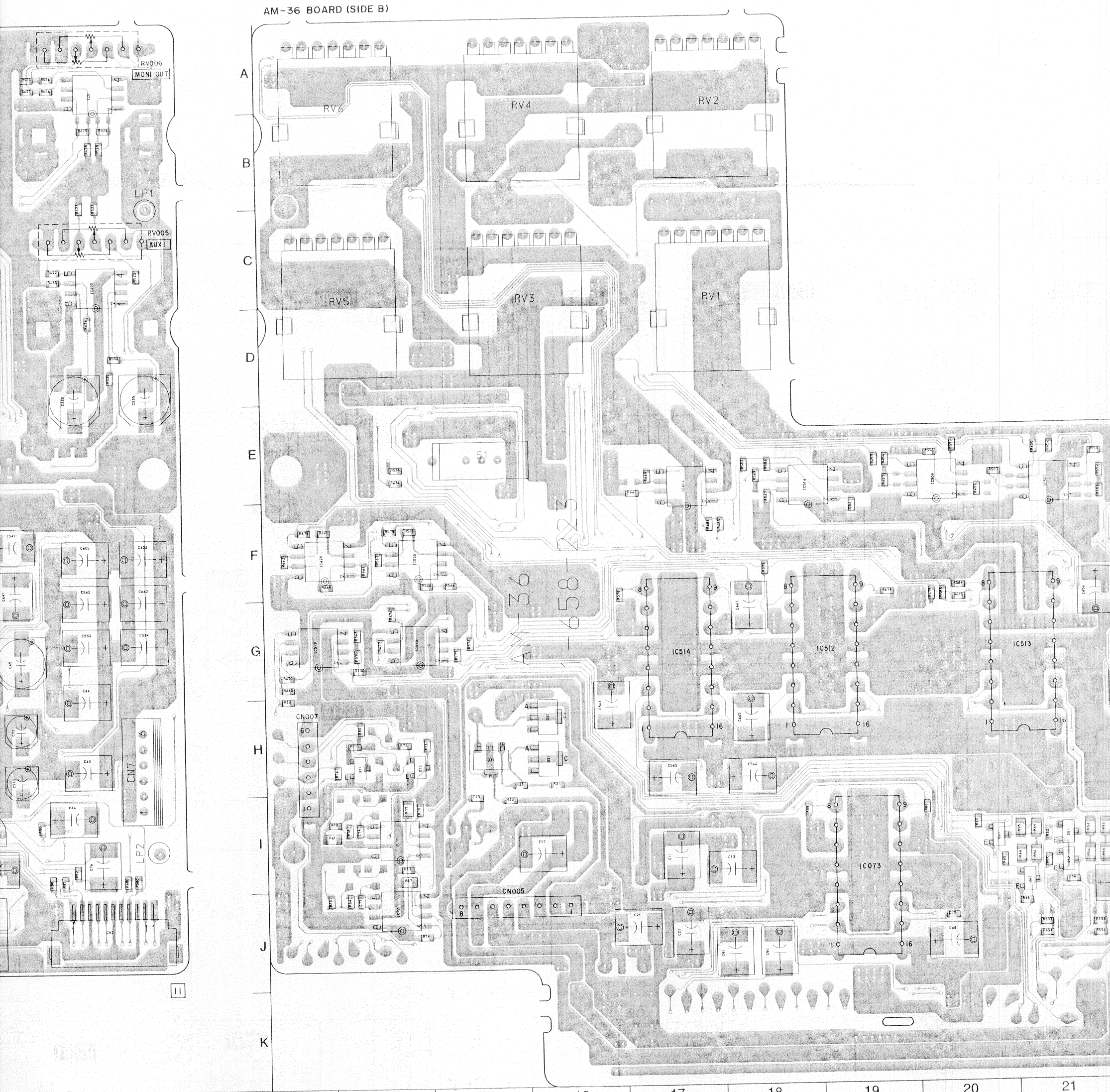
AM-36 (AUDIO) / AS-46P (VOLUME) PRINTED WIRING BOARDS

— Ref. No. : AM-36 Board; 1,000 / AS-46P Board; 1,000 Series —

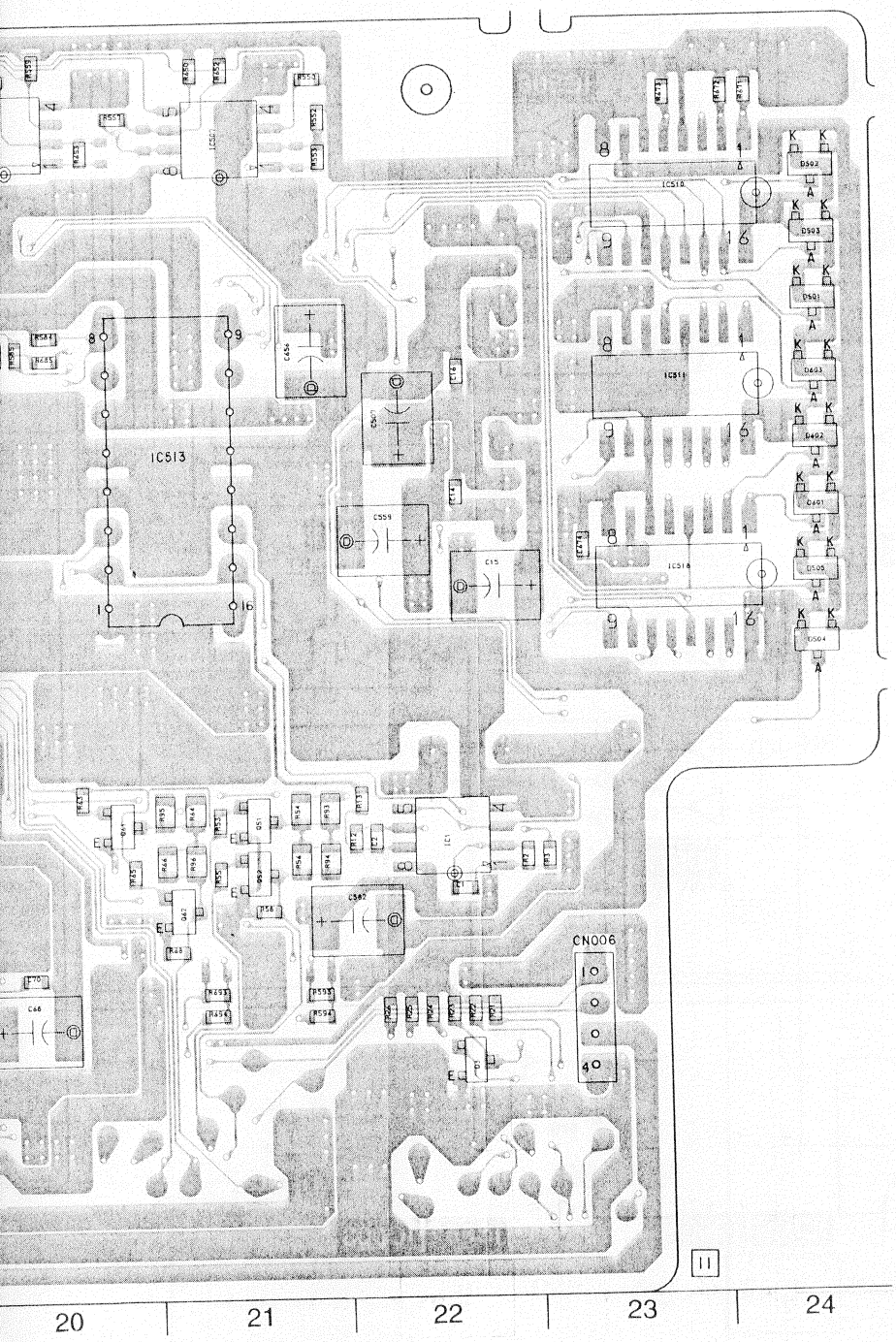
AM-36 BOARD (SIDE A)



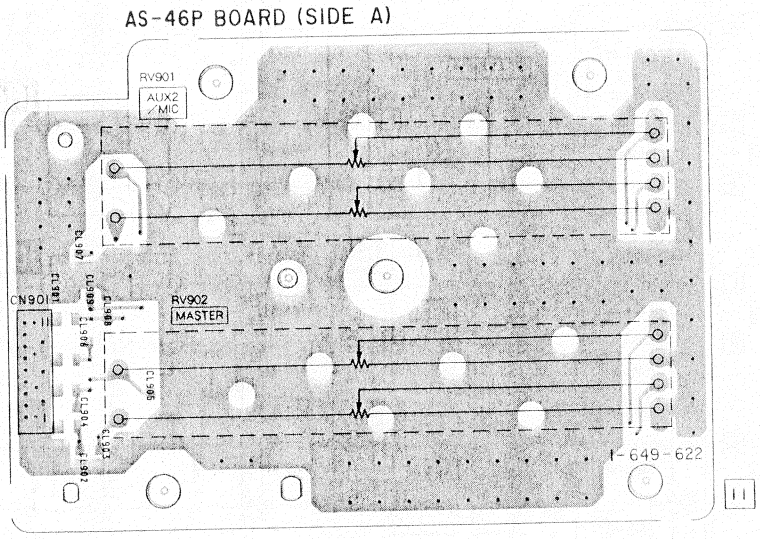
IC073	I–6	IC616	E–17	Q072	H–15	R032	I–15	R071	H–14	R089	H–13	R522	C–11	R555	D–9	R576	G–15	R613	B–9	R652	E–21	R673
IC505	C–7	IC620	F–14			R033	H–16	R072	H–14	R090	I–10	R523	B–11	R556	E–20	R577	G–15	R616	A–8	R653	E–20	R674
IC506	C–9	L001	I–8	R001	I–3	R052	I–4	R073	H–15	R093	I–21	R525	G–3	R557	E–21	R578	F–17	R617	A–8	R654	B–7	R675
IC507	E–20	L002	J–8	R002	I–22	R053	I–21	R074	J–15	R094	I–21	R526	A–10	R558	D–9	R579	F–14	R622	C–10	R655	B–9	R676
IC509	E–19	L003	H–9	R003	I–22	R054	I–21	R075	I–4	R095	I–20	R527	A–10	R559	E–20	R580	I–11	R623	B–11	R656	E–19	R677
IC510	E–23	Q001	K–2	R004	I–3	R055	I–21	R076	H–14	R096	I–21	R528	B–11	R561	F–15	R581	F–6	R625	G–3	R657	E–19	R678
IC511	F–23	Q002	K–2	R005	I–3	R056	I–21	R077	I–14	R097	I–11	R529	B–11	R562	F–14	R583	E–18	R626	A–10	R658	B–9	R679
IC512	G–6	Q003	J–22	R011	I–3	R057	I–3	R078	I–14	R098	I–11	R531	F–3	R563	G–14	R584	F–20	R627	A–10	R659	E–19	R680
IC513	G–4	Q004	J–3	R012	I–21	R058	I–21	R079	I–13	R099	I–18	R532	F–4	R564	F–15	R585	F–20	R628	B–11	R661	F–14	R681
IC514	G–8	Q005	J–3	R013	H–21	R061	I–14	R080	H–14	R100	G–14	R533	F–6	R566	F–15	R586	E–18	R629	B–11	R662	F–14	R683
IC515	G–15	Q006	J–3	R021	J–22	R062	I–4	R081	I–4	R502	C–8	R534	E–15	R567	E–18	R593	J–21	R631	F–4	R663	G–13	R684
IC516	E–18	Q007	K–3	R022	J–22	R063	I–20	R082	I–11	R503	C–7	R535	D–11	R569	E–18	R594	J–21	R632	F–3	R664	F–14	R685
IC518	G–23	Q031	H–15	R023	J–22	R064	I–21	R083	I–14	R506	C–7	R536	D–11	R570	G–14	R595	K–4	R633	E–7	R666	F–14	R686
IC519	G–14	Q051	I–21	R024	J–22	R065	I–20	R084	J–14	R507	B–7	R550	E–21	R571	H–1	R602	B–7	R634	E–15	R667	E–17	R693
IC520	F–15	Q052	I–21	R025	J–22	R066	I–20	R085	J–14	R512	C–9	R551	D–7	R572	H–1	R603	C–7	R635	C–10	R669	E–17	R694
IC603	C–11	Q06	I–20	R026	J–22	R067	I–4	R086	E–19	R513	C–8	R552	E–21	R573	H–2	R606	A–7	R636	D–11	R670	G–13	R695
IC605	A–7	Q062	I–21	R027	I–2	R068	I–20	R087	I–14	R516	B–9	R553	E–21	R574	G–6	R607	A–7	R650	E–21	R671	E–23	
IC606	A–9	Q071	H–14	R031	H–16	R070	I–14	R088	I–20	R517	B–9	R554	D–7	R575	F–18	R612	B–9	R651	B–8	R672	E–23	RV001



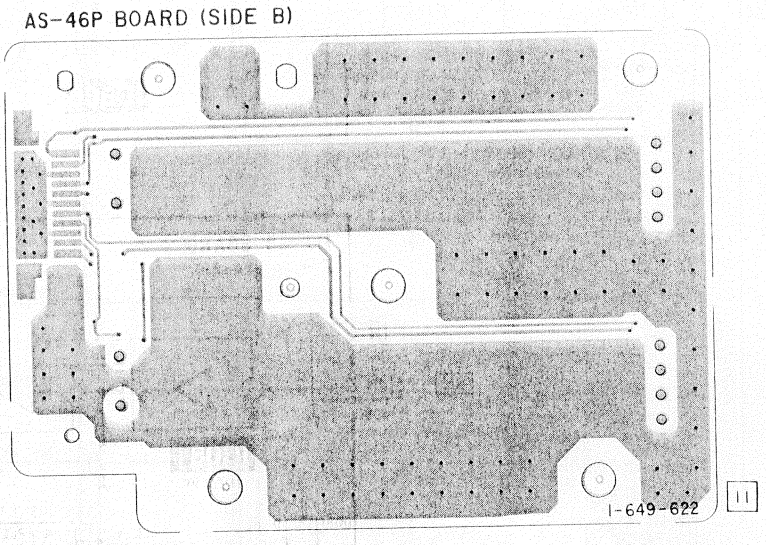
B-9	R652	E-21	R673	E-23	RV002	A-18	
A-8	R653	E-20	R674	F-19	RV003	C-16	
A-8	R654	B-7	R675	F-20	RV004	A-16	
C-10	R655	B-9	R676	G-14	RV005	C-14	
B-11	R656	E-19	R677	G-14	RV006	A-14	
G-3	R657	E-19	R678	G-7			
A-10	R658	B-9	R679	F-14	S001	E-15	
A-10	R659	E-19	R680	I-11			
B-11	R661	F-14	R681	E-8			
B-11	R662	F-14	R683	F-18			
F-4	R663	G-13	R684	G-4			
F-3	R664	F-14	R685	F-20			
E-7	R666	F-14	R686	F-18			
E-15	R667	E-17	R693	J-21			
C-10	R669	E-17	R694	J-21			
D-11	R670	G-13	R695	J-5			
E-21	R671	E-23					
B-8	R672	E-23	RV001	C-18			



AS-46P BOARD (SIDE A)

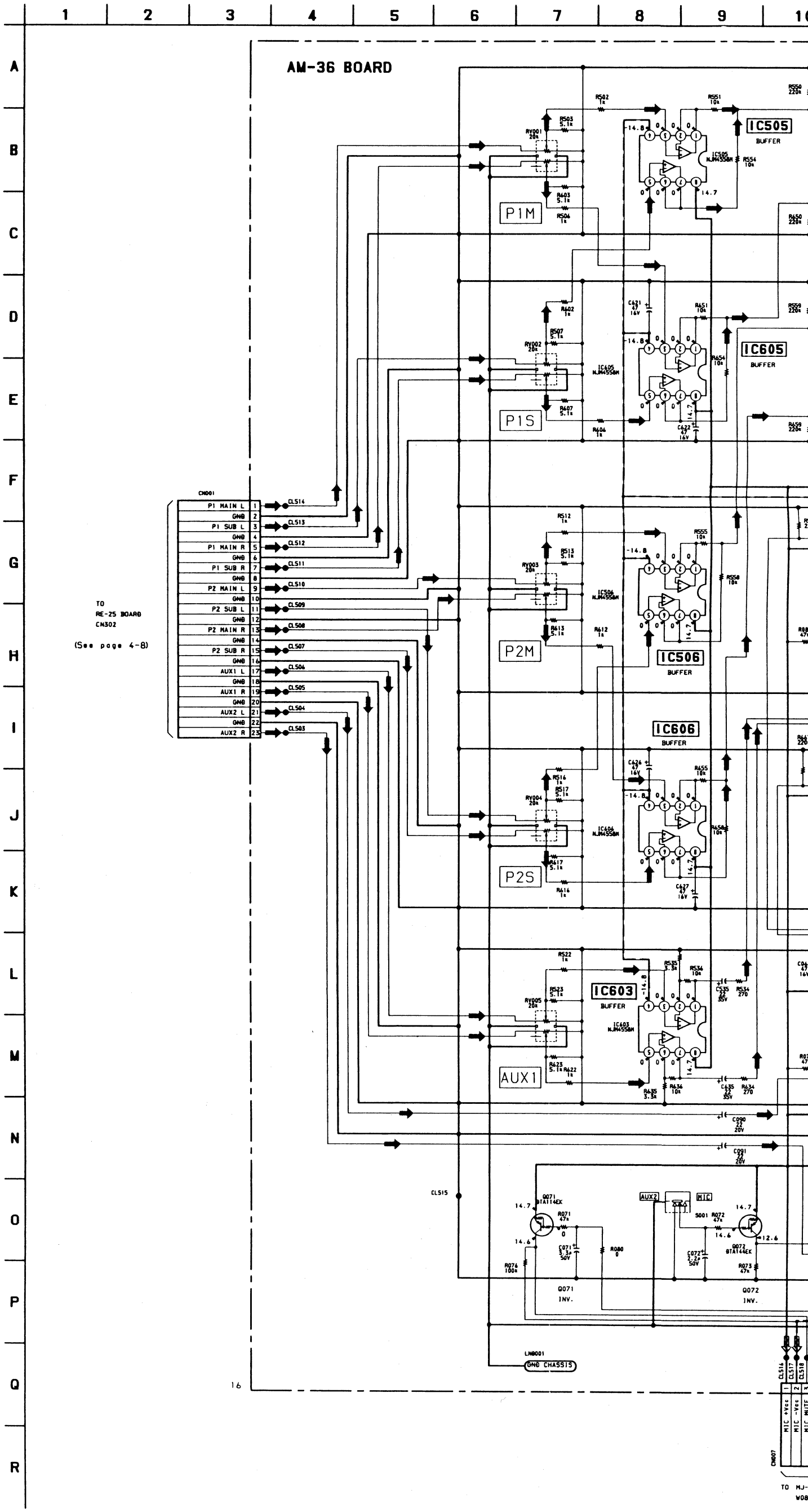


AS-46P BOARD (SIDE B)



AM-36 (AUDIO) / AS-46P (VOLUME) SCHEMATIC DIAGRAM

— Ref. No. : AM-36 Board; 1,000 / AS-46P Board; 1,000 Series —



Note :
"See page" indicates the page of the block diagrams and schematic diagrams to be referred to.

(See page) : If "See page" is in the round parenthesis ( ), refer to the Service Manual.

〈See page〉 : If "See page" is in the triangular parenthesis 〈 〉, refer to the Service Manual SUPPLEMENT-1.

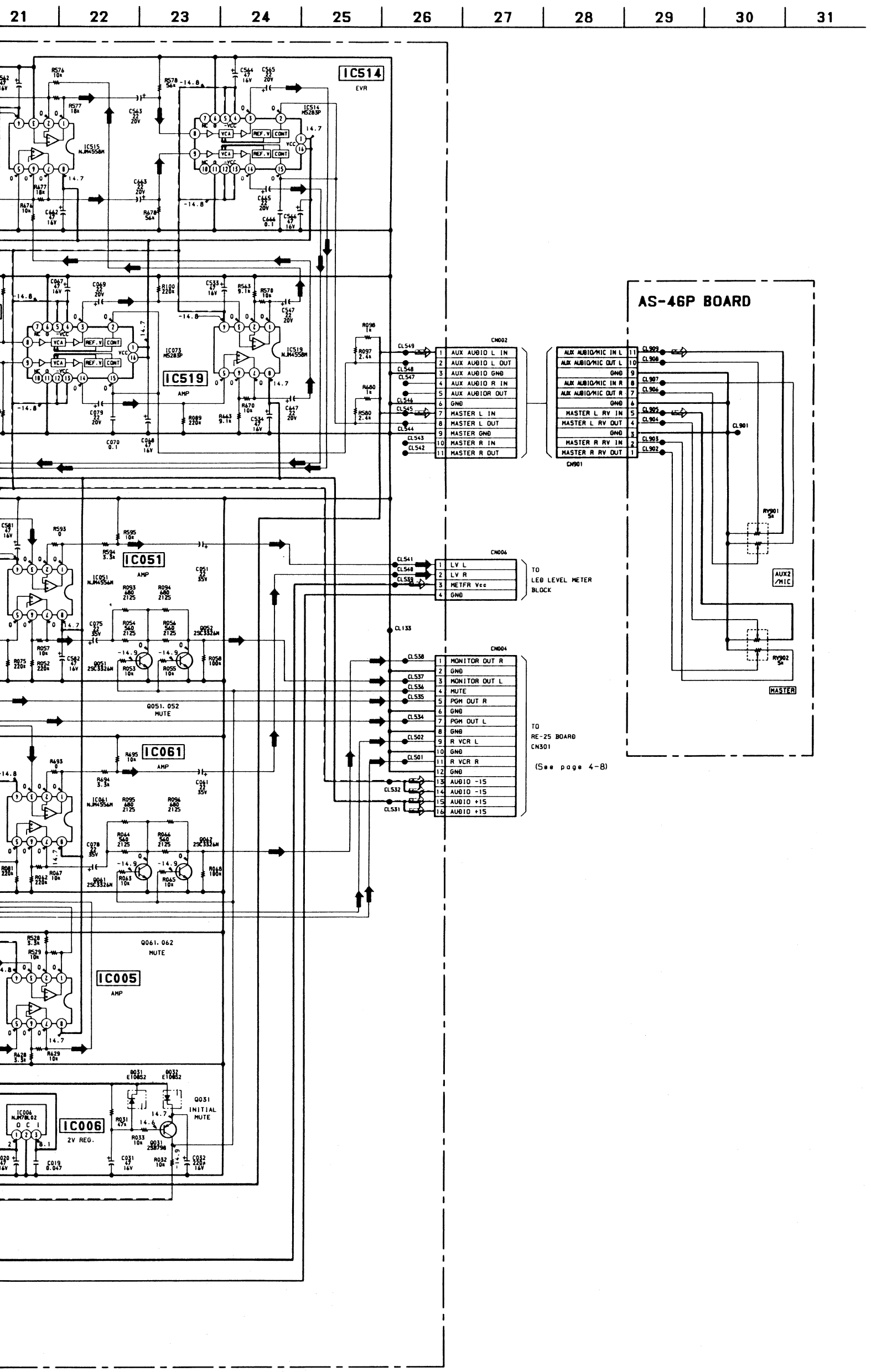
9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24

IC505 BUFFER
IC507 AMP
IC510 INPUT SELECT
IC512 EVR
IC515 MIX AMP
IC605 BUFFER
IC509 AMP
IC511 INPUT SELECT
IC513 EVR
IC073 EVR
IC519 AMP
IC516 REC/PGM SELECT
IC518 MONITOR OUTPUT SELECT
IC520 INV. AMP
IC051 AMP
IC616 REC/PGM SELECT
IC004 BUFFER
IC620 INV. AMP
IC061 AMP
IC071 AUX/MIC SELECT
IC001 INV.
IC072 AUX/MIC SELECT
Q001-004 INV.
Q005-007 INV.
Q072 INV.
IC002 +8V REG.
IC003 -8V REG.
IC006 2V REG.
Q051. 052 MUTE
Q061. 062 MUTE
Q031 INITIAL MUTE
IC005 AMP
MONI OUT

CN007: MIC +Vcc, MIC -Vcc, MIC MUTE, MIC CONT, MIC SIG, GND
TO MJ-65 BOARD W081 (See page 4-69)

CN003: AU SEL A0, AU SEL A1, AU SEL B0, AU SEL B1, MOUT SL 0, MOUT SL 1, MOUT SL 2, DIGI GND 1, EV AUDIO A, EV AUDIO B
TO 8V-19 BOARD CN702 (See page 4-111)

CN005: AUDIO +15V, AUDIO +15V, AUDIO -15V, AUDIO -15V, GND, GND, DIGI 5V, GND (DIGI)
TO FU-123 BOARD CN603 (See page 4-114)



·SIGNAL PATH

	VIDEO SIGNAL			AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA	
				➡